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THE MODERN UNIVERSITY SCHOOL—ITS PURPOSES AND METHODS.

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The earliest American medical schools were established in connection with institutions of general learning, as would have been expected from the fact that the physicians who founded them had been educated in Great Britain and France, where the medical colleges were, without exception, departments of universities. Only a few of the American schools, however, were established with such a relation, the larger majority being quite independent of any university or college connection, so that in 1877, twenty-five years ago, less than twenty of the sixty-five medical colleges then in existence were connected in any way with institutions of general learning. Subsequent to that date, however, such schools have become much more numerous, and of the one hundred and fifty-eight medical schools at present existing in America, between sixty and seventy are connected with a university or college.

These facts suggest some interesting queries. Why were not all of our medical schools, following the example of those first founded, established in connection with institutions of general learning? What motives have prompted the movement which, starting about 1880, has resulted in the large increase in medical schools so connected? What is the nature of the relationship which exists to-day between the medical schools and the universities with which they are connected? Has this relationship resulted in the largest possible measure of advantage to either the medical school or the university? And finally, what should be the nature of this relationship in order that the best results may be secured?

THE DIFFERENT CONDITIONS IN THE EARLY DAYS.

In answer to the first query it may be noted that there ere no universities in America in the broad, European ense until comparatively recent years. Our institutions of higher learning were as most of them still remain, colleges, devoted to purely academic instruction, n the classics, mathematics and philosophy. Such an stitution has nothing in common with the professional hool, and there can be little advantage or propriety ny connection between them. Then, too, it was ly possible to establish the medical school on such sis as to make it a fit member of a university organ- The rapidly-growing country demanded phy- s in large numbers, trained as best they might be practical life, but with requirements and the ex- e of the college course such as not to place it beyond the reach of all but a few students. Until the middle of the last century the majority of students entered the practice of medicine through an apprenticeship with a preceptor. The chief problem was how to induce these students to spend any time at all in the medical school, and to have exacted high requirements for admission, and a prolonged and expensive course would have been to defeat the very purpose for which the school was established. But a college with such standards, little or no restriction as to preliminary education, graduating after attendance on two, four or five months' sessions of repetitional lecture courses, could not fittingly have been made a department of a true university.

Thus medical colleges came to be established by medical men as independent institutions, sometimes, it is true, with other than the highest motives, but, on the whole, with an honest purpose to meet a real need. In passing judgment on these colleges and their founders due regard must be taken of the conditions which obtained at the time they were organized. In the absence of endowment or financial aid from the state the college had no resources excepting from the fees of students, which were of necessity low. It was imperative that the standards of the school should be such as to insure a sufficient number of students to maintain it on a working basis. For the past twenty-five years there has been no real demand for more medical colleges, and the judgment if not the motives of those who have instituted most of the colleges established within this period may well be questioned, but previous to that time the physicians who established the medical colleges of the old type were, with few exceptions, animated by an honest purpose, and possessed a logical and discriminating judgment in adjusting the standards of education very closely to the needs and conditions of the times. These institutions, sometimes styled commercial, never, so far as I have knowledge, yielded a direct money profit, though the indirect return to the occupants of the clinical chairs was in many cases large. Fortunately, the demand for physicians is no longer such as to compel the maintenance of schools with low standards.

THE TRUE UNIVERSITY.

The true university dates its inception in America from the founding of the Johns Hopkins University, which within a few months has celebrated its twenty-fifth anniversary. From this institution, with its emphatic pronouncement that the extension of knowledge by original investigation must constitute the very essence of the true university, can be directly traced the origin of the university idea in this country. Soon Harvard, Yale, Columbia and Pennsylvania caught th new spirit, and the founding of the Clark University the early '80s, with the growth of Cornell and some of the state universities, gave evidence of the fact that the university idea had taken deep and abiding root in American soil. Unfortunately, however, many other colleges, entirely lacking the means, the men or the equipment essential for true university work, stimulated by a feeling of rivalry, became ambitious to pose under the larger name. Mistaking mere multiplicity of departments and a large enrolment of students as the essential features of the university, they promptly became, by a mere process of rechristening, nominal universities. Naturally the next step was to institute professional departments, and, as in many cases, colleges of law, medicine, dentistry, pharmacy and the like, already established and prosperous, were located in more or less close proximity, the ambitious university found it much easier to expand along these lines by a process of amalgamation than by the creation of wholly new departments. The professional schools were, in most cases, more than willing to enter into such an alliance, for they, too, had caught the university idea in the same superficial way, and had come to feel that a university connection of some sort was the order of the day, and that the medical school must be so connected to be in vogue. Yet another motive was found in many cases in the rapidly-increasing cost of maintenance. The introduction of laboratory methods, the necessity for salaried teachers in the fundamental branches, and for the maintenance of hospitals and dispensaries to provide adequate clinical material had increased the cost of the medical course beyond the student's ability to pay for it even when the fees were increased to twice those formerly charged. It was obvious that governmental aid or private endowment must be had and that this could seldom be secured by the medical college as an independent institution.

THE NOMINAL CONNECTION WITH A UNIVERSITY.

The character of the relationship, however, which exists between the college or university and the medical school has been in the large majority of cases purely nominal, as evidence of which a specific case will serve. I have in mind an institution which blossomed forth in a few months from a college with less than four hundred students into a university with an enrolment of nearly twenty-five hundred. An analysis of the student list, however, discovers the fact that about eight hundred of these students were in the medical college, which had added to its title "The Medical Department ——— University," over four hundred were in a dental college, similarly allied, some two hundred in a law school, and a large number in a school of pharmacy. The number of students in the actual collegiate departments had not increased nor had the number of members in the faculty, while the courses offered and the character of the work done had not been materially altered. And what was the nature of the union between this "university" and its constituent professional schools? Purely nominal. They had not surrendered one iota of their autonomy. The separate board of trustees and faculty were in each case retained intact, having entire and unrestricted control over the finances of the professional school, of appointments to its faculty, of the standards of admission and graduation, and of all its other affairs. These departments were located several miles from the university, and the only visible evidence of their connection with it, aside from the printed line on the announcements and letter heads, was the appearance of the president of the university to con-r the degrees at the annual commencement.

While this example represents the extreme degree of looseness in such a connection, it differs only in a degree from that of the large majority of the medical schools now connected with universities in this country. May not the real value of such an alliance, to either the university or the professional school, be fairly questioned? There has been a disposition to attribute to these university connections the rapid progress which has taken place in medical education in recent years, but it is difficult to conceive how such a purely nominal relation can have had much influence in this regard. This progress, comprising the elevation of the standards of admission and graduation, the lengthening and grading of the curriculum, the introduction of new branches and of improved methods of instruction, has come about as the inevitable result of the advancement which has been going on in all lines of education. The development of the true university and of the university spirit in America has had much, indeed most, to do with it, but not through any such nominal relationship as in the case above cited. It is a singular fact that even in the older medical schools, which were from their inception university departments, the relation of the medical with the general faculty has had so little of unity or intimacy about it. The medical department is usually removed by some distance from the university proper, the faculties never meet together, and in almost every respect the medical school is conducted as an independent institution.

THE PROPER RELATIONSHIP TO THE UNIVERSITY.

The largest service can never be accomplished by the medical school nor can the fullest measure of advantage result to it or to the university from such a purely nominal relationship. What, then, should be the nature of the union between the medical school and the university of which it is a part?

It must be made an intimate, integral part of the university. Its financial management must be given over wholly to the board of university trustees, a body of laymen with large business experience, deriving no pecuniary advantage from this position and commanding the fullest confidence of the community. Only by such an arrangement, and the assurance of wise and disinterested management which it affords, can private endowment be successfully invited. It would be of distinct advantage to the university to have at least one medical man on this board of trustees. The medical teachers must be members of the university faculty, sitting in its councils and having a voice in the educational policy of the whole institution, while, on the other hand, the conduct of the medical work should be subject to the advice and approval of the general faculty.

THE FUNDAMENTAL BRANCHES.

The teaching of the fundamental medical branches which constitute the first two years of the curriculum, as now arranged, should be conducted in the corresponding university departments of physics, chemistry, anatomy, zoology, physiology and bacteriology. Even pharmacology and fundamental pathology should be so taught, for in the widest and best sense these sciences are branches of general learning and should be provided for in the university quite apart from their medical significance. The advantages of such an arrangement are many and important. It will obviate the expensive duplication of departments as they exist now under the prevailing system. Most of these branches are at present taught in the university proper, in well-appointed laboratories, by men who are devoting their lives to research and teaching in their respective lines, yet at the medical school of the same institution this expensive equipment is duplicated and another corps of teachers employed, either on a similar basis, or more often as men who are primarily practitioners of medicine, only incidentally teaching these subjects in a perfunctory way while waiting for some incumbent of a clinical chair to vacate by death, resignation or otherwise, and thus make possible the fulfilment of their real ambition. Of more importance is the fact that these subjects can only be taught in the right way in the university proper, for only there can they be so pursued as to lay a broad, thorough foundation for their subsequent application to clinical medicine.

MEDICINE AS APPLIED SCIENCE.

Medicine is applied science. Its practice consists in the application of the principles, facts and methods of chemistry, anatomy, etc., to the study and treatment of the diseases and accidents of the living body. In the pursuit of any applied science it is surely the logical method to master the general principles and methods first and to proceed therefrom to a study of their application in any specific direction. Fundamentally the chemistry which the physician needs to know is quite the same as that required by the metallurgist, the manufacturing chemist, the pharmacist, or one in any other vocation where chemistry is concerned. It is only in the application of chemistry along these special lines that the methods differ.

The medical school has for years been attempting to teach its students the fundamentals of chemistry and their specific application at the same time. In the short course of two five months' sessions there seemed to be no escape from this. But what was the result? The student, crowded for time and jealous of every minute, sought to learn, as his professor sought to teach him, those isolated facts of chemistry which seemed, at the time, to have most direct bearing on medicine. Yet no teacher, however wise, much less any student, could possibly anticipate the chemical knowledge which might be of medical import a few years in the future, in the rapidly-progressing art and science of medicine. The result was a half knowledge mostly soon forgotten. If the medical man is to have a groundwork in chemistry which will enable him to keep abreast with his profession, he must be so trained in the fundamental facts and principles as to enable him to keep in touch with the advances in that science, to read its literature intelligently and to apply the frequent new discoveries to his daily work. To illustrate: ten years ago the remarkable facts of physical chemistry relative to the behavior of mineral salts in very dilute solution—the so-called ionic condition of matter—would have been pronounced by any chemist as among the most theoretical and impractical facts of that science, yet already the investigations of Loeb and his pupils have demonstrated these facts to have a most important bearing on physiology, pathology and pharmacology. Indeed, it is not too much to say that these facts of physical chemistry, which we owe to Arrhenius and van t'Hoff, offer an apparent promise of a solution of more problems in the fundamental and practical medical sciences than any others now known to us. Few physicians trained by the older methods of the medical school, have been able to keep pace with these developments or even to read them understandingly, but to the medical man who received an adequate training in chemistry in a college or university, they present little difficulty.

What has been said in reference to chemistry is equally true of anatomy, both gross and microscopic, of neurology, embryology, physiology and physiologic chemistry, of bacteriology and pathology. Studied primarily in the atmosphere and by the methods of the university the ground-work of these sciences is laid in a broad and comprehensive manner which enables the student to follow their progress in later years and their specific application to medicine and surgery is easily acquired. Pursued in the illogical, unsystematic manner of former years, they are never mastered and too often the physician soon awakes to the unpleasant consciousness that the facts acquired at such a laborious expenditure of time and energy have most of them flown from his memory. Not only has he failed to keep abreast with the newer knowledge—he has forgotten the old. Life is too short and time too precious to be wasted in memorizing facts that must soon be forgotten.

THE BENEFITS OF THE UNIVERSITY ATMOSPHERE.

Great benefit will come to the student from two or three years spent in the atmosphere of the university in the daily companionship of men who are masters in their several departments and who, as investigators, are seeking to add new knowledge by their own discoveries. The spirit and method of the research worker is exactly that of the successful practitioner of medicine whose every case is a problem, never exactly like any other that has been met before. Such problems are never satisfactorily solved by routine rules of diagnosis and treatment, but only by the exact painstaking examination of the facts in the particular case and the application thereto of the principles of anatomy, physiology and pathology. The successful practitioner is he who is most completely a master of this "investigative" ability, and who avoids most effectually the pressing temptation to become a "routine" doctor.

Of the influence on the student of the social and intellectual life of the university it is hardly necessary to speak. No environment is more conducive to the development of a strong, broad-minded influential man and citizen, and that is what we would wish every physician to be. The transfer of the teaching of the fundamental branches to the halls and laboratories of the university proper, will do more toward the creation of a strong and influential profession than any other plan that has yet been tried. For this reason, and because it is adaptable to so many medical schools, it seems to me to be the most progressive and far-reaching movement which has yet been made in medical education.

THE PURPOSES OF THE UNIVERSITY MEDICAL SCHOOL.

The purposes of the university medical school, organized on the lines indicated, will be broader and more comprehensive than those of the existing medical schools because of its larger facilities and possibilities. They may be briefly summarized: 1. The preparation of men for the practice of medicine—undergraduate instruction; 2, the training of selected students for teaching and research work; 3. to offer opportunities for practitioners to keep pace with the advance of medicine—such as are now afforded by the policlinic schools; 4, the preparation of men for public health service; 5, to extend the bounds of medical knowledge by affording opportunity and encouragement for research work; 6, to investigate and pronounce authoritatively on alleged new discoveries bearing on medicine, and 7, to educate the public along medical lines by the methods of university extension.

THE UNDERGRADUATE STUDENT.

The preparation of young men for the practice of medicine in the usual sense of the term, must always constitute the largest and most important function of the university medical school. And by this is meant the education of students for the humblest as well as the most exalted walks of the profession. Time was when the college or university was an exclusive institution, whose members were disposed to feel themselves removed from the world at large, set apart for certain special and exalted duties. Happily that time is past and the modern university seeks above all things to keep in touch with and to supply the needs of the world of affairs, wherever and whenever it can do so. Witness the rapid growth of the university extension, of correspondence courses, of short courses in agriculture, pedagogy and the like, and of the establishment of departments of agriculture, economics, banking and commerce, journalism and other ultra-practical branches.

THE STANDARDS OF ADMISSION.

The attitude which the university medical school assumes in regard to this matter will largely determine its standards of admission and graduation. While the university must stand always for the highest practicable requirements, it seeks not to cut itself off from the education of men who are needed for the work of the world by placing these standards beyond the reach of all but a few. Its requirements must be adjusted to the conditions of the times and be gradually raised as the community is educated up to their endorsement and to the adequate appreciation and support of the men whom the university has trained. It would be a great misfortune if the university medical school were to confine itself to the instruction of the select few who would find adequate recompense for their expensive training only in the higher walks of professional life. Such a policy would inevitably result in a wide and ever widening breach between the few schools of this class, and the great number of medical colleges with low standards, to whom would fall the teaching of the rank and file of the profession.

We hear much of an ideal standard of admission to the medical school. And what may that be? Surely not the bachelor's degree, for as conferred in this country by the thousand or more institutions empowered to grant it, it is no standard at all, its significance ranging from less than many high school diplomas to that conferred by the highest grade universities. One institution, to my knowledge, admits students from the grammar school, confers a bachelor's degree after two sessions of fifty weeks each, allowing the student during the same period to complete the course for the degree of Ph.G. If knowledge of certain specific branches be demanded in addition to the bachelor's degree, may it not well be asked why, if these are the essential things, the degree should be made a prerequisite at all?

The degree which affords the nearest approach to an ideal is that of Ph.D. This degree has been guarded with much more care in America than any other. It certifies, when from any standard institution, that the student has not only pursued a seven years' course of collegiate instruction, but that he has given evidence of capacity as an investigator—of the very qualities of mind, indeed, which are most demanded in the study and practice of medicine. But would any one contend that such a requirement could reasonably be exacted of all candidates for admission to the medical college under the conditions and emoluments of private practice at present in vogue? Such a demand would be "ideal" under ideal conditions and an ideal appreciation by the public, of the physician's merit and the compensation due him, but the truly "ideal" standard, in the most useful sense of the word, is that which best fits the graduate in medicine for the conditions of his time, and this must be, for a long time to come, not a fixed but a gradually increasing standard.

THE TRULY IDEAL STANDARD.

And what may be fairly demanded under existing conditions? Bearing in mind the readiness with which the medical schools have met the rapidly increasing demands of the last decade—demands, in large part created by the schools themselves—there can reasonably be exacted in the near future, by every medical school, a four-year high-school education, and, in addition, two years of college work, insisting that this be partly in chemistry, physics, biology, mathematics, English, German and French—branches which are especially needful as a preparation for medical work. And with such a preparatory course the student can procure the bachelor's degree in the university medical school by applying his credits for the first two years of his purely medical work on the course for that degree, without in any degree doing violence to existing university procedure. The fundamental medical branches, if taught in the university itself, by university teachers and university methods, have quite the same culture value as have geology, astronomy or any of the other sciences, and credits for work in these branches should count on the scientific or arts course in exactly the same way. Under such an arrangement the average student is able to secure the degrees of B.S. and M.D. in from six to six and a half years from the date of his entrance to college, should begin his medical work at the age of 21 or 22, and be launched into practical life, with a year of hospital training, at 26 or 27. The problem of launching young men into professional life with an adequate training at an earlier age than has been possible under the existing methods, has been much discussed by leading educators. In some of our best universities the course for the bachelor's degree has been shortened to three years. The plan here outlined, of telescoping the literary or scientific with the professional course, where they so nearly correspond, seems to offer a much more logical and satisfactory solution. The advantage to many students of a complete collegiate course of four years, as precedent to the medical school, is clearly recognized, and every inducement should be offered such students to prolong their course of preparation. The right of any school to insist on a four years' college course as a standard of admission may not be gainsaid. It is only meant to contend that it would be unfortunate for the community if all of the high-grade schools were to adopt such a policy.

Should any special medical degree be conferred on the student who has presented a bachelor's degree for admission? Not unless he gives evidence in his medical course of the superior capacity and attainments, which he should have derived from his longer course of preparation. And, if he does this, if he manifests the investigative ability, and accomplishes research work in the medical branches similar to that which is demanded for a master's degree or the degree of doctor of philosophy, one of these degrees should be conferred.

THE PREPARATION OF THE TEACHER AND INVESTIGATOR.

Recent changes in the methods of medical education have greatly increased the demand for men who have been especially trained for the work of teaching and investigation and who prepare themselves with the intention of devoting their lives to such work. Not the least, therefore, of the functions of the university medical school will be the education of this class of students. And how shall these students be selected? Shall the entrance requirements for these pupils be different from those exacted of the larger group who are preparing for the practice of medicine? I believe not, for no plan of examination can ever enable a faculty to select such men so wisely as will the observation of their daily work in the regular course of instruction. One of the most capable and successful investigators and teachers whom I have known possessed only a high school diploma when he entered the medical school, yet in his sophomore year he accomplished a piece of research work which would have done credit to a doctor of philosophy, and immediately after his graduation he was appointed to a responsible university position, which he fills with distinction. It is not at all certain that this young man has done an unwise thing in foregoing a collegiate career. True, his case is somewhat of an exception to the general rule, but provision must be made for such exceptions. Furthermore, it is of mutual advantage to the research worker and to the ordinary student, that they be educated in the same institution and in daily contact with each other—to the ordinary student because it is of the greatest advantage to him that he should be in the atmosphere and should catch the investigation spirit; from the standpoint of the research worker because the selection of such men can best be made from large groups of students who are revealing their special abilities and characteristics to their teachers in their daily work.

THE UNIVERSITY POLICLINIC.

In every progressive occupation, reports of progress from all over the world find their way most quickly to the large centers and men who are themselves engaged in teaching and investigation are most likely to keep informed as to the new discoveries which are being made. The physician engaged in a busy practice, far removed from such a center, finds it difficult, even with the abundant current literature and the aid of a good library and laboratory, to keep thoroughly abreast of the times. He finds it of advantage, therefore, to seek such a center from time to time, to spend a few weeks in special postgraduate study. The necessity for this sort of review on the part of the general practitioner has been especially pressing during the last few years, owing to the enormous and rapid advance of the medical sciences. How great has been the demand for facilities in this direction is evidenced by the large number of policlinic and postgraduate schools which have come into existence since 1882. These institutions have met a real need and have been of great service, but it is not too much to say that they have not been organized on the best possible basis nor do they offer facilities for the highest kind of work. A great variety of work is demanded by these policlinic students; some need courses even more fundamental than the ordinary undergraduate, for whole new sciences, like bacteriology, have been created since these gentlemen took their medical degrees; some few are really competent to enter on the study of and preparation for a specialty, while a few have the necessary equipment and qualities of mind demanded by research work of a high order. To adequately supply these various demands, needs an institution of large resources, a large faculty, and very large hospital facilities. Only the university medical school has anything like the equipment necessary for this work, and the instruction of practitioners, in the broadest, most complete manner, will constitute one of its important functions. The university policlinic will not be conducted on the "Make-a-specialist-of-you-while-you-wait" policy that has too often prevailed, but for the sound and legitimate purpose of enabling the practitioner to continue his student-life, and to keep in touch with the new knowledge and improved methods so that he may utilize them in his daily work. Its laboratories and libraries will be at all times open to the physicians in proximity to the university that they may the more thoroughly and exhaustively study their cases by the methods and apparatus and the literature not otherwise at their command.

THE EDUCATION OF THE SANITARIAN.

Courses in state medicine and sanitary science are a pressing need of the time. Preventive medicine has profited far more than curative medicine by the discoveries of recent years, especially in bacteriology. Our hope for the future lies in the education of the public in regard to matters already well known to the profession, in the enactment of suitable laws, and in the efficiency of properly trained health officers, city, state and national. State medicine constitutes a distinct specialty and its successful pursuit demands a particular course of study which should extend over at least two years. Nowhere can the facilities for such a course of postgraduate instruction be adequately afforded excepting in the university, with its many departments, its large corps of trained investigators and teachers, and its well-appointed laboratories. In the department of geology, there may be studied the character of rocks and soils and of physiography in their relation to water supply, drainage, sewage disposal, and the like; in the department of chemistry, instruction in water analysis, toxicology and the chemistry of food and drug adulteration, will be offered; in the department of zoology, a knowledge may be acquired of animal parasites and of the microscopic examination of animal foodstuffs for their detection; the department of bacteriology will occupy a conspicuous position in this course in state medicine for the study of the bacteriologic examination of water, of milk, and other foods, and the detection of the various pathogenic organisms; the theories and methods of disinfection should be fundamentally studied; in the department of pathology, connected as it must be with a large hospital, there will be taught the methods of conducting a postmortem examination, especially in connection with medicolegal cases. And, finally, practical instruction must be afforded, in the health department of the city itself, in such matters as house inspection, the testing of sewer traps and other plumbing, public vaccination, the detection of cases of infectious diseases, the institution and maintenance of quarantine, the registration of vital statistics, the best methods of educating the community by the circulation of pamphlets, through the public press, and otherwise. There are few health officers who would not heartily coöperate with the university in offering such facilities as this, as these students can be of great service to the health department in the conduct of its daily work, and they would thus make abundant return for the instruction received.

THE PROMOTION OF RESEARCH WORK.

The obligation of the university and of everyone connected with it, to extend the bounds of knowledge by independent research, is now universally recognized. Investigation of the unknown as distinguished from mere appreciative study of the work of others, constitutes the keynote of the modern university, and this will be no less emphatically a feature of the medical than of its other departments. Investigation is essential, however, not simply that the bounds of knowledge may be extended, but that the spirit and method of research may be inculcated in every student. It is important that this fact be kept in mind for a thorough appreciation of this purpose will affect most decidedly the attitude of the teacher toward his pupils. He is not discharging his full duty nor doing the largest service when he confines his attention and devotes his best energies to the few selected students who demonstrate special capacity for such work and give promise of developing into competent investigators. Naturally, his interest will be especially aroused in this group of pupils. but he has no less an obligation to inculcate the same spirit and to train in the same methods of work the less capable individuals who are preparing for the ordinary practice of medicine.

RESEARCH IN THE CLINICAL BRANCHES.

In several American universities superior opportunities for investigation in the fundamental medical sciences of anatomy, physiology, chemistry, bacteriology, pharmacology, embryology, physiological chemistry, and pathology, are now afforded, and research work of a high order is being conducted in these branches. Quite as important, however, are the clinical branches of medicine and it remains for the university medical school to provide the men and the facilities to take up research work along these lines. This means, in the first place, the provision of a corps of teachers in each of the clinical branches who, divorced entirely from the labor and distractions of active practice, may devote themselves unreservedly to teaching and investigation in their several departments. This does not by any means imply that there will be no place in the faculty of such a school for the teacher who is at the ame time a practitioner of medicine. Medicine, as has been said before, is an applied science and in its teaching force there will always be need of men who are daily engaged in the application—the regular practice—of their vocation. A large part of the necessary instruction of the student can only be accomplished by such teachers. Nor will the active practitioner be excluded from the privileges and obligations of research. Most of the advances in medicine which have been made up to the present time have been accomplished by physicians in active practice. Doubtless some of these men might have accomplished more in the way of discovery had they been freed from the exacting duties of practice, but we may not say this of them all. Some of these discoverers doubtless found in the conditions of their daily work the very incentive and environment which was essential to their investigations. Certainly this has been true in the other applied sciences, as, for example, in electrical, mechanical and chemical engineering, some of the most important discoveries in which, not only in methods of application, but in fundamental principles have been made by men who were practicing engineers.

In the second place, investigation in the clinical branches demands the provision of special hospitals, absolutely under the control of the university, perfectly equipped and adequately supported, where patients may be studied under conditions which have not yet obtained in full measure in any hospitals with which I am acquainted. It will be of advantage, if there can be brought together in such a hospital, from time to time, groups of cases of the same or allied disorders. What might not be discovered, for example, from an exhaustive study of a group of forty or fifty cases of diabetes mellitus, gathered in one building for a few months, where the condition could be absolutely controlled? That every such hospital must have abundant laboratory facilities and a corps of trained assistants goes without saying.

THE INVESTIGATION OF ALLEGED DISCOVERIES.

From time to time there arise in medicine fads and 'isms and 'pathies, loudly heralded by their promulgators as the only and long-awaited panacea for all the ills that flesh is heir to, and such has been the history of the world since time began. Many such claimants for popular credence carry their own refutation and are no more worthy of investigation by the university than would be the claims of the newspaper weather-prophet or the street-corner astrologer and horologist. Some of these passing fancies, however, take a strong hold on the public mind, and much harm results, before the utter falsity of the fad is demonstrated, or, possibly, the small kernel of truth winnowed from the mass of chaff. Often it would seem as if the credulity of the public were in direct ratio to the absurdity of the claims of the system. The fancied division in the public mind of scientific medicine into so-called "schools," and the supposed animosity of the adherents of these schools toward each other, has precluded the possibility of any investigation and pronouncement from the independent medical college having any considerable weight or authority. May not the university with its large faculty, representing many phases of thought, and free from the suspicion of prejudice, perform an important service to the community by the impartial investigation of such claimants as seem at all worthy of serious consideration, and a candid statement of the facts? In the broad open spirit of liberality and desire for the truth, which should characterize the university, the advocates of any new system or 'pathy might properly be invited to present their claims before the faculty or a commission to be selected for that purpose. Such an investigation as that conducted under the auspices of the University of Pennsylvania a few years ago—the Seybert Commission for the investigation of spiritualism—occurs as an illustration of the thought here presented.

UNIVERSITY EXTENSION AS RELATED TO MEDICINE.

If the beneficent results to the recent enormous advance in our knowledge of preventive medicine are to be realized in any large measure, this can only be by means of the education of the public in matters of personal and community hygiene. The medical profession has been remiss in this direction, but this has been in large part owing to the difficulty of addressing the public without violating the established ethics of the profession. The practitioner, competent to give instruction, has hesitated to do so because of the certain imputation of ulterior motives, the charge that he was seeking to exploit his knowledge and so secure his own aggrandizement. A great work awaits the university medical school which it can accomplish by adapting to this purpose the university extension methods, which have been so successful in other branches of learning.

Especially available for this service as lecturers and writers will be those members of the medical faculty who are not engaged in active practice, and to whom, therefore, no suspicion of improper motives can attach. The vital and well-established facts in reference to infectious diseases, etc., advice in reference to personal hygiene, clothing, food; the abuse of intoxicants, the need of legislation in reference to sanitary matters and the enormous possibilities of wise enactments—these are but some of the items which may be effectively presented to the public by means of the university extension and correspondence courses, articles in the newspapers and popular magazines, and through other avenues of instruction. Existing organizations like the social clubs for either sex, university extension centers, churches, and the like, may be readily utilized in this work.

THE METHODS OF THE UNIVERSITY MEDICAL SCHOOL.

The methods of the university medical school will differ in some respects radically from those which have heretofore obtained. While didactic and so-called clinical instruction to classes of 200 or 300 students may continue to have place, that place will be a very limited one. Students must be taught singly or in small groups in the laboratory, at the bedside, and in the dispensary, where they may train their faculties and acquire knowledge at first hand by seeing, hearing and handling things, instead of at second-hand by merely reading or hearing what some one else has had to say about them. Then, too, education and not the imparting of information will be the prime subject of instruction. In the ten months formerly available there seemed so much knowledge to impart that there appeared to be time for little else, but with the thirty to thirty-six months now occupied by the medical course, and with the obvious impossibility of imparting any considerable fraction of our medical store in thrice that time, it has come to be realized that the actual facts selected for the student's acquisition are of minor importance, but that it is a vital matter that he acquire the ability to observe accurately, record clearly and concisely and to think logically along medical lines. This means that the scheduled work of the curriculum must consume fewer hours of the day—never to exceed six—that the remainder of his working day may be spent in the library, or in his room learning to use medical literature properly, to write clearly and to think! to think! to think! It is surprising how absurdly overcrowded, and how utterly unbalanced the curricula of most of our medical schools have grown. In not a few of them, eight and even nine hours of scheduled work being daily demanded.

THE ELECTIVE SYSTEM.

Nothing offers a more ready and satisfactory solution of this difficulty than the elective system—so long and successfully in vogue in some institutions of general learning and recently adopted, in whole or in part, by some medical schools. It may be defined as that plan by which a student, pursuing a course for a degree, is allowed some choice in the studies he shall pursue, in his methods of study and of the teachers who shall instruct him; to adapt, in a word, his course of study to his tastes, his ability and his needs. It finds its *raison d'etre* in two fundamental and obvious facts: the vastness of knowledge and the variability of individuals. If it were possible to encompass all medical knowledge within the limits of a four years' course of study, or if it were possible to select for all students alike those facts which are most essential for every one of them to know, then the question of curriculum would present little difficulty. Neither of these things is possible and therefore the items of information which are acquired by each student, exclusive of a few of the fundamental and important truths in each branch, are not of necessity nor with advantage, the same for each student. On the other hand, students differ very widely in mental make-up, and no plan of education can be successful in developing the best there is in each man which fails to take cognizance of this fact and adapt its course of preparation to each individual, or, rather, to permit the student to so adapt it by the election of his work with the advice and approval of his instructors.

It will be no purpose of the elective system to make specialists of the undergraduate student, and any tendency in this direction may be readily avoided. It is unfortunate that the term "elective" should have been used in such a restricted sense by some writers as applying only to a system where the student is allowed absolute freedom of choice as between major branches. All of the advantages of election may be secured in full measure by requiring a specified minimum of work in each branch, as in anatomy, physiology, medicine, surgery, obstetrics, and the like, but permitting choice as to topics, methods of study and of teachers. Such a demand together with the requirement of the approval of a dean or other officer of the registration card, and the subjection of the student to a thorough practical examination in each of the major subjects, previous to graduation, affords a perfect safeguard against this abuse. Moreover, the good sense and judgment of the student himself, which teachers are prone to underestimate, are, in themselves, a sufficient safeguard.

I have elsewhere discussed the merits of the elective system as applied to medicine.[1] and the limits of this address preclude a fuller presentation of this important topic at this time. It will suffice to say that in the medical schools where it has been adopted on the most liberal lines, it has proven eminently satisfactory and has been demonstrated to be quite as decided an advance in the medical as in other departments of education.

THE CONTINUOUS SESSION.

The continuous session, in one form or another, will be a conspicuous feature of the university medical school; that is to say, the school will be in session, with perhaps slight intermission throughout the year in northern climates where work in the summer months is feasible. A board of trustees composed of business men will be little likely to allow an expensive plant to lie idle three or four months of the year, any more than they would close a manufacturing plant, representing an investment of several millions of dollars, for a like period. And this does not mean that only special or supplemental courses for teachers, physicians or students will be offered during vacation period, but that full work will be done throughout the year, exactly the same during the summer months as at other periods. Such a plan is scarcely feasible except under the elective system, for reasons sufficiently obvious. The continuous session is especially advantageous to the self-supporting student, who may often find it more convenient to devote the winter months to some bread-winning occupation. It is, moreover, of assistance in subdividing the classes, especially for clinical work, which can only be done satisfactorily in small groups. Many diseases, too, are to be seen and studied in the summer which are peculiar to that season. The continuous session will enable the ambitious, progressive student to shorten the period between his matriculation and graduation, and this ought to be made possible. It is true that this is in contravention of the present medical practice acts and of the rulings of the several state boards of medical examiners—rulings which seemed necessary to correct a serious evil at the time they were passed, but there is no logical defense for the present chain and halter method of hitching students together and compelling all to go at an unvarying pace. A certain minimum amount of accomplishment should be demanded, but while one student might require five full years to complete such a course, another may do it equally well in three, and he should be permitted to do so. Alexander Hamilton completed a law course, ordinarily requiring three years, in four months—an extreme exception, to be sure, but illustrative of the great difference in power of accomplishment between individuals.

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[1] Bulletin of the Am. Acad. of Med., July, 1900.

The same laboratory methods which have been so successfully applied to the fundamental branches must be utilized in the teaching of the clinical branches, and this means that the medical school must have hospitals—not necessarily large—under its absolute control and available for research work in the clinical branches by all modern methods. It means, too, that some of the clinical teachers will be wholly engaged in teaching and research work to the exclusion of practice, and an adequate corps of trained assistants, both in laboratory and clinical lines. The clinical faculty will, therefore, comprise two classes—those who are exclusively devoted to teaching, research work and hospital practice, and who are adequately compensated therefor, and those who are in active practice—both hospital and private, but who devote a portion of their time to teaching and investigation.

THE EXTRAMURAL CLINIC.

While the university must have research hospitals under its own control, the amount of clinical material which is required for the large number of students is so enormous, and the expense of maintaining large hospitals so stupendous, that it seems unlikely that the millions of money which such a plant would require will be within the control of the university in the near future. But even with unlimited means, it would be poor business policy to neglect the large amount of clinical material already available in existing hospitals, but unutilized for teaching purposes, and especially would this be unwise in view of the fact that the use of these patients for teaching purposes is certain to be of great advantage to the patients themselves. No patients are so exhaustively examined, so carefully studied and so well treated as those who are the subjects of clinical teaching.

In almost every large city are hospitals in which the members of the attending staff are anxious to teach; and students are sorely in need of clinical material. All of this difficulty may be adjusted by a system of extramural clinics. Needless to say that the members of the several staffs who are appointed to extramural positions should be selected with due reference to their capacity as teachers and investigators, and never should one be given such an appointment merely because he can command a large amount of clinical material. By judicious effort in many cases the appointment of competent men can be secured to hospital staffs to the betterment of the clinic and the advantage of the patients, as well as for the extension of the extramural work. The removal of these hospitals by some distance from the college is not an insurmountable objection, for students will cheerfully go a considerable distance to receive such opportunities if the courses are only so arranged that the time spent in going and coming be not too great in proportion to the hours occupied by the course. It is usually best to arrange these courses so they will occupy a half-day. In the very large cities the establishment of two or three clinical centers, where students may remain in residence for the whole or part of the year, will enable all of the hospitals to be easily reached. Extramural teaching is only possible under the elective system, where credit is given for the work on the course for the degree, for the student's time is too fully occupied to permit of his giving much time to work which carries no credit. The control of very large charity hospitals by political appointment should be no discouragement, for by the combined and persistent efforts of the faculty, aided by the influential men of the board of trustees, even these obtuse politicians can sooner or later be convinced of the enormous advantage to the institution and its inmates of this kind of service.

The necessity for great care in the courteous and careful handling of patients needs to be strongly emphasized, for nothing will be more certain to prejudice the public against clinical work of this kind than a harsh, discourteous manner on the part of the clinician, the undue and unnecessary exposure of the body sometimes resorted to, or the granting of too great liberty to the thoughtless student. An undergraduate should rarely be allowed to examine a patient except in the presence of an instructor. Properly conducted, extramural clinical teaching is of advantage to the patient, the student, the attending physician, the hospital; indeed, to all concerned, and it offers a ready and practical solution of a serious difficulty which just now presents itself to the medical school.

THE MIGRATION OF STUDENTS.

The migration of students from one school to another, such as is common in the German universities, is a plan which ought to be encouraged. Such a custom enlarges the student's latitude of election, broadens his mental outlook, and the constant interchange of students strengthens and stimulates the several colleges and the individual teachers.

PRACTICAL EXAMINATIONS.

The question of thorough, practical examinations as the final test of the student's ability to enter safely on the practice of his profession, has been much neglected in America. It is a matter of great importance and must be satisfactorily solved by the university medical school, but time does not permit a fuller discussion of the matter in this address.

THE NEED OF ENDOWMENT.

The expense of carrying out the scheme which I have briefly outlined for a modern medical school is enormous. With the largest classes, and even prohibitory fees, the income from tuition must fall far, far short of meeting that cost. In a word, the cost of a modern medical education has grown to be greatly in excess of the student's ability to pay for it. State aid or private endowment must be had if these plans are to be realized. With our present outlook private beneficence holds out much the larger promise, and in the hope of such assistance there is every reason to feel the greatest encouragement. The recent gifts to medical institutions and for the promotion of medical research on a princely scale, furnish conclusive evidence of the fact that men of affairs and of large capital, whose chief desire is to find a use for their means which shall be of the largest service to the world, have come to realize that, in these medical channels, large gifts are more likely to yield a certain, speedy and bountiful return in good to the world than in almost any other. And so, in conclusion, let me assure you that the outlook is most hopeful. The modern university school is already in existence in three or four cities, and while it has not yet come to its full glory and usefulness, we may rest assured that the signs are most encouraging, and that in the near future we shall have in operation in America medical schools in advance of any which the world has yet seen.

SHOULD THE GENERAL PRACTITIONER HAVE A WORKING KNOWLEDGE OF THE OPHTHALMOSCOPE AND TRIAL LENSES?*

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Baas says in Handerson's History of Medicine[1] that "Specialism is *per se* an evidence of a civilization of high development: indeed, of one tending toward its downfall," and speaking of the division of medical labor in our larger cities, Handerson[2] says that "the dangers of running specialism to seed are very manifest."

It might be possible to demonstrate historically that excessive specialism is the forerunner of medical decay, so that if in the present discussion I run counter to modern medical thought I may find justification for doing so in the ups and downs of medical progress throughout the ages.

There is no necessity of my calling the attention of the members of this Section to the great importance of the ophthalmoscope as an aid to diagnosis. And yet, I fear that while it is so valuable to us and we accept its findings with such confidence we often fail to impress upon the general profession its extreme importance.

One of the most impressive lessons I ever learned happened upon the receipt of Wood's little inexpensive English edition of Haab's Atlas of Ophthalmoscopy. When it was delivered at my office there were two or three general practitioners and several medical students present. I expressed myself as doubtful whether colored pictures of the fundus of any value could be published for so small a price. In order to test the accuracy of the representations it was suggested that I first examine the plates and make my diagnosis of the case represented. I was expected not only to diagnose a case of retinitis, neuritis, choroiditis, atrophy, etc., but to express an opinion as to the probable general conditions: such as syphilis, Bright's disease, brain tumor, ataxia, etc. After going through the entire list of 105 plates and checking up all my mistakes by comparing my diagnosis with the printed text with each illustration, in the words of one of the gentlemen present I only fell down on six: one of these I diagnosed as congenital, opaque nerve fibers, but as the patient was a rabbit and I failed to diagnose the rabbit it was counted against me. This test proved to my mind that the plates were extremely valuable, but to the gentlemen present it was an object lesson in the value of the ophthalmoscope which they never forgot; and I believe all of them have become enthusiastic users of the ophthalmoscope. One of them, the late Dr. Tuckerman, a man over forty years of age, used it intelligently daily in his private and hospital practice. There is something most remarkable when you come to think about it, that upon a hasty glance at a cheap reproduction of the appearance of the fundus of the eye you are able to say of this one, the patient has Bright's disease, of that one, congenital syphilis, another, pernicious anemia, another, brain tumor, and of another, probably his parents were cousins, and so on through the list. When I have presented the subject to the student in this light and then explained to him how inadequately any picture, no matter how well executed, fails to portray the eye-ground as seen by the skilled observer, I have no difficulty in kindling an enthusiasm in the mind of the student to see for himself.

But I had intended to take it for granted that we all believe that it would be a good thing if every practitioner could use the ophthalmoscope intelligently. The only question being, is it practical? Is it possible for the average medical student in the time allotted to him or that he may take profitably from his other studies to gain a working knowledge of this instrument? Twenty years ago I should have answered this question in the negative. My recollections as a student in the Moorfield Hospital in London were disheartening where many students came from America and would hang around the clinic for weeks and months and I am confident that many of them returned home without ever having seen a fundus oculi.

During my early experience as a teacher of ophthalmology I often became discouraged after failing completely to aid the student in seeing the fundus, even after many trials. But the medical student has changed. He is quite a different animal from what he was ten or twenty years ago. The student that now enters a medical school has at least learned how to study, and after two or three years of careful, thorough, conscientious laboratory work, when he comes up to the senior year he brings with him not only a trained mind but a trained eye and a trained hand. And I find that it is the exception now, when a student with this thorough laboratory training does not see the fundus the first times he takes the ophthalmoscope in his hand. He not only sees it but is able to make a creditable drawing of what he does see. Formerly, I sometimes doubted the wisdom of spending so much of the time of the student in the laboratory looking through microscopes, but I find that the training of eye and hand is just the preparation they need to become skilled diagnosticians, physicians and surgeons. And while I still doubt the value of some of the things they learn there I am fully reconciled to their spending their time in work of such exceeding great value in training their faculties for the more important work they are preparing to perform.

My experience has been that the student who buys an ophthalmoscope at the beginning of his junior year gains a practical knowledge of its use before he graduates, providing he has sufficient opportunity in dispensary and hospital clinics; and I believe at the present time most medical schools have sufficient clinical facilities for them to do so. And they do it without encroaching upon the time that should be devoted to other studies. It is surprising in our school, which I presume is no exception, how many of the clinical teachers are becoming familiar with the use of the ophthalmoscope.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Wurdemann and J. A. Lippincott.

[1] Handerson's Translation of Baas' History of Medicine, p. 17.

[2] Ibid., p. 857.

The practitioner who uses the ophthalmoscope is not usually content with his knowledge of ophthalmoscopy until he has mastered the trial case and is able to fit spectacles also. I know that the mere mention of the general practitioner fitting spectacles suggests to the minds of every one present the middle-aged or aged practitioner who, having failed to make a success of general practice, took a six weeks' post-graduate course, bought a brand-new ophthalmoscope and test case and came home prepared to teach us all how to snip muscles. The traveling optician is preferable. These men were never equipped as general practitioners; they are hangers-on, and not worthy of consideration. I have in mind the medical student as we find him to-day—the man trained in mathematics, physics, chemistry and biology before he enters on the study of medicine. The student thoroughly trained in numerous laboratories for two years supplemented by two years of clinical instruction and in most cases an additional year of hospital practice either at home or abroad. The practitioner with this training can not be judged by the standards established ten or twenty years ago.

Following the lead of Johns Hopkins nearly all the medical colleges of the country adopted the plan some years since of confining all the clinical teaching to the last two years of the curriculum. It has been found that this method has not proved as satisfactory as anticipated, and many schools are now providing clinical instructions for sophomores and freshmen as well as for more advanced students. It is the opinion of many medical teachers that it is desirable to bring the student in contact with the patient almost from the first day he enters upon the study of medicine. This, it is claimed, was one of the redeeming features of the old perceptor method of teaching. The student first saw patients with his perceptor and subsequently in the medical school received his theoretical education. The study of medicine should be a perpendicular rather than a horizontal investigation. The student should first examine the patient, follow the clinical history of the case, examine the secretions and follow the patient to the postmortem table, and then study the pathologic specimens in the laboratory, thus obtaining a complete concept of diseased conditions rather than an innumerable number of disconnected facts and observations in the biologic, chemical, anatomic, histologic, bacteriologic, physiologic, pathologic and pharmacologic laboratories. The work as now prosecuted is extremely valuable from a scientific standpoint, but being so far disconnected from the main object in view, viz., that of making good practitioners of medicine, that the student leaves the modern medical school illy-prepared to follow his vocation. It is claimed that we have effectually killed off the medical perceptor but have not supplied his place. The perceptor who used the ophthalmoscope taught his student to use it. The stethoscope, laryngoscope, ophthalmoscope and other instruments of precision in diagnosis should be put in the hands of the student the first year of his medical studies.[*]

Some years since the oculists of Ohio were summoned before the State Board of Registration and Examination to formulate a rule to govern the prescribing of spectacles by the opticians. Some of the younger ophthalmologists were very much in favor of a strict interpretation of the law, enforcing which would prevent all but graduates of medicine prescribing spectacles. I asked this question: If the opticians do not this work who will? We have over 3,000,000 people in the state, all of whom sooner or later will need spectacles. There are probably not more than 100 physicians in the state competent to prescribe spectacles intelligently. It is clearly impossible for them to fit the entire population with glasses. The general practitioners are unfitted by education, experience or inclination to do it, and until such time as they are willing to undertake this work I believe that it would be injudicious and unwise to interfere with opticians prescribing spectacles. The following rule[1] was adopted:

> *Resolved*, That the act of prescribing and adjusting glasses in uncomplicated cases of visual defects shall not be held as practicing medicine, within the meaning of the law, but that the act of prescribing glasses or of adjusting the same, without the order of a physician in any case in which the vision can not be brought up to the normal, and which, in addition to visual defects, there exists any inflammatory condition, organic change, or disease of either the constituent or auxillary structure of the eye, *shall* be held as practicing medicine, within the meaning of the law.

In my address as chairman of this Section in 1894 I expressed the opinion that every practitioner should possess an ophthalmoscope and a case of trial lenses and that he should be able to fit spectacles much better than jewelers, druggists and traveling spectacle vendors who style themselves opticians. I am of this opinion still. But until such time as the general practitioner prepares himself to do this work the spectacle vendors will continue to reap the harvest which properly belong to the medical profession. It has ever been thus—quacks abound because the profession does its work poorly. We howl about overcrowding the profession, and yet the people of this country spend millions for patent medicines and thousands for legitimate drugs on physicians' prescriptions. The hardest chair to find a man to fill in our medical colleges is that of practice of medicine, and will continue to be so until the younger members of the profession are prepared to be all-around general practitioners. It is a mistake for every young physician to hope to become a surgeon or a specialist. If I were a young man entering the profession to-day, I would make a specialty of general practice, and would prepare myself to do much of the work that the surgeon and specialist now do.

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TEACHING OPHTHALMOLOGY TO UNDERGRADUATES.[*]

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Vast changes have been wrought in the practice of medicine in the past quarter century and its teaching has undergone radical metamorphosis. Time forbids, and necessity does not demand, a review of this evolution.

Teaching, even to-day, is of secondary importance to the average medical teacher, practice demanding the most of his time and study, and as a consequence the whole scheme of teaching in most medical schools lacks system, and the different branches, and even different portions of a branch, are taught entirely independent of each other, no co-relation being observed. The chaos resulting from this medley is like a vaudeville. Each star and satellite performs his act, and when the final curtain rings down there is left with the spectator a sense of incompleteness, because the entire performance is devoid of plot. It is time, therefore, for us to pause in our scientific work and give some attention to this subject.

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[*] See Bayard Holmes on the "Progress of Medical Education," The Journal A. M. A., Dec. 23, 1899.

[1] Ohio State Board Medical Registration and Examination in First Report, 1896, p. 25.

[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

This paper pertains solely to the teaching of ophthalmology to undergraduates and will be considered under two heads, i. e., method, and matter of teaching.

METHODS.

Didactic Teaching.—Many of our teachers are successful practitioners, and are able by virtue of their experience to give good clinics, and because of their practice can furnish the necessary material; but good practitioners are not always good lecturers. Lectures are of undoubted value when given by a good talker or illustrated in some manner that will enable the student to retain what he hears, as, for instance, by the introduction of cases, specimens, drawings, or use of the microscope or stereopticon.

Recitations.—The student should not be obliged to so occupy himself taking notes that he will miss much of the lecture and to avoid this we should have textbooks adapted to the student's needs from which lessons may be given. This recitation method of teaching is of extreme value, and is much neglected in the last year of the medical course. If desired, the regular lecture course can be given by one of the professors, for instance, and the recitation course by one of his assistants.

Clinical Teaching.—While it would be unwise to advocate any one method, we must agree that the most valuable way of teaching ophthalmology is by clinical instruction. Clinical lectures may be given before a full class, and a whole series of cases may be presented for illustration. In this manner the different types or stages of a disease may be exhibited or the differential diagnosis between like affections may be demonstrated. Then there is much to be gained by clinical demonstrations of the methods of examination and treatment, and these may be carried on in the dispensary before small sections. Students should have an opportunity for practice at such times. The operating clinic should be held before sections small enough so that every student will have opportunity to see the entire operation. Operating before an amphitheater full of students who can not see what is going on, is to be deprecated. Major operations, such as cataract extraction, even if the student never intends to perform them are of value, as they teach by object-lesson how to prepare a patient preliminary to operation, the technic of intra-ocular surgery, the objects, danger, results, etc., of such operations. The minor operations, such as the extirpation of chalazia, the opening of lachrymal abscesses, etc., are valuable because the student will probably sooner or later perform them himself.

Laboratory Work.—In histology, bacteriology, pathology, anatomy and physiology, laboratory methods should be taught the student before he takes up the subject of ophthalmology *per se*, by the teachers of those branches.

MATTER.

With the development of the science of medicine and surgery and the advent of bacteriology, laboratory teaching in chemistry, anatomy, histology, physiology and pathology now necessarily occupy more time than was required fifteen years ago to finish the entire medical course. In addition to this laboratory work and the subjects which were taught at that time there are many additional chairs, not to mention such courses as mechanotherapy, history of medicine, hygiene, sanitation, etc. All of the branches, including the original fundamental subjects of practice, surgery, and obstetrics, and the various specialties, have enlarged their scope, demanding more time for their teaching. Clinical teaching, in the meantime, has been increased to a great degree, and consequently we find each day more filled in the medical curriculum, now, when a medical course in a high-grade college consists of four years of eight months each, than when only two years of six months were required.

If you will study the schedules of the various leading medical colleges you will be surprised to find every day so full. You will find in the senior class that about thirty hours per week are required; that in many colleges a senior student is carrying from 16 to 20 branches at one time, and you will be able to realize how little time remains for study and digestion of the knowledge he is trying to gain. It becomes necessary, therefore, in preparing the course of study to concentrate and eliminate.

Concentration.—By this is meant the concentration of a branch within a shorter period, completing ophthalmology and otology, for instance, in eight weeks by having four hours a week instead of spreading them over thirty-two weeks of one hour a week. Concentration may be so arranged that the student will carry at one time only one-quarter the number of studies now required in many medical colleges. It enables him to remember from one lecture to another, and prevents confusion that is bound to exist when he is burdened with many branches at one time.

Elimination.—By elimination is meant the elimination of unimportant branches and irrelevant portions of important branches. This matter of deciding what should be eliminated is a difficult one. In earlier days the special branches were taught by the general practitioner and no attempt was made to teach details which the general practitioner will never have occasion to use in his practice, or if he does have use for them he will have forgotten them long before that time arrives, while he can easily post himself when the necessity arises.

There is a vast difference of opinion among teachers of the same subject as to how much should be required. By studying the various college catalogues, we find in ophthalmology and otology, that in one university there is no didactic teaching and only 52 hours of clinical teaching while in another 56 hours of didactic and 64 hours of clinical work are required of each student, and there is as much more optional clinical work. It seems, therefore, that the ophthalmologist is not the one to fully decide how much time should be allotted to ophthalmology, but that the whole faculty should coöperate in outlining the general course of study, apportioning the time as seems best.

Some teachers in ophthalmology believe that we should teach in detail not only all of the diseases of the eye, but ophthalmoscopy, refraction, unimportant operations on the eye, retinoscopy, the theories of color perception and what not, but where they find the time in the medical curriculum to give them this knowledge is difficult to understand. A proper preparation for refraction work alone requires an entire year of continuous study and experience, and a superficial knowledge, such as could be gained in the time at the undergraduate's disposal, is worse than none at all. I believe there are certain portions of ophthalmology (and this is true of every special branch) which are essential to the general practitioner, especially if he is located in the country; for instance, the knowledge of how to differentiate glaucoma from iritis, because each of these affections requires immediate attention, and the treatment of these two diseases being opposite, a mistake might prove fatal to sight. He should be taught also how to attend to those things which he will meet commonly in his practice, even though they are not of a serious character. Not only should these things be taught, but the student should be required to learn them, and if he fails to pass a satisfactory examination he should not be allowed to graduate, for he would not be a safe practitioner. He should be taught the things he can do with safety and what things are dangerous in unskilled hands, for "fools rush in, where angels fear to tread," and many eyes and lives are sacrificed as a result of the ignorance and assurance of those who do not know their limitations.

In this process of elimination, then, we must require only as much time in the teaching of ophthalmology as will give the student a practical knowledge of those diseases and conditions which are the most common and the most important. Preliminary to the regular course on the eye from the teachers in those branches, he should gain a practical knowledge of anatomy, physiology, histology, pathology, and bacteriology, so that very little time need be occupied during the regular course in ophthalmology upon these subjects. *In the regular course in ophthalmology he should* be shown how to examine the eyes by inspection, how to evert lids, oblique illumination, the technic of ophthalmoscopy and be shown a normal fundus, the inspection of the cornea for foreign bodies, method of removing, the diagnosis of ulcers and other corneal diseases, the pupil, its changes in health and disease and in chloroform anesthesia, palpation for tension and ciliary tenderness, how to test and record the acuteness of vision. The common diseases of the eye, such as blepharitis marginalis, hordeolum, chalazion, dacryocystitis, simple conjunctivitis, trachoma, purulent conjunctivitis, phlyctenular conjunctivitis, keratitis (parenchymatous and ulcerative), iritis, sympathetic ophthalmia, panophthalmitis, glaucoma, injuries. Besides these, other diseases and conditions should be defined and causes given, such as trichiasis, entropion, ectropion, ptosis, orbital cellulitis, pterygium, staphyloma, scleritis, cyclitis, choroiditis, retinitis, intra-ocular tumors, cataracts, optic neuritis and atrophy, amblyopia. Under refraction the symptoms which result from errors of refraction should be fully explained and the ordinary terms defined.

Elective and Optional Courses.—These may be given to supplement the required courses, which will cover as fully as the time allotted will allow those less important portions. In order to avoid possible confusion I will define the words elective and optional, and I can best do this by quoting Professor Dodson of Chicago University:

> Election may be defined as that method under which the student pursuing a certain course looking to the acquisition of degree or diploma, is allowed some choice in the courses of study which he may take. The term "election" is not applied to those studies which are taken by special students, who enter the college with no intent of completing the course and receiving the degree. It is convenient, furthermore, to distinguish between elective and what may be called "optional" courses, an optional course being defined as one which a student may take in addition to his regular work, and for which no credit is given, excepting perhaps a special certificate setting forth the fact that the student has taken the said optional course.
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> To the teacher the elective system presents the advantage of the greatest possible incentive to good work. An instructor whose students are required to be in attendance upon his lectures, whether they would or no, is under no obligation to make his course the best possible and he is prone to become careless and indifferent in his teaching. If, on the other hand, the attendance upon his classes is left to the choice of the student, who is at liberty to elect other similar courses taught by other teachers in the faculty, the attendance will depend solely upon his efficiency as a teacher, and constitutes a continual and most powerful inducement to the best work.
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> It is, however, the testimony of all who have had to do with the elective system that the greatest benefit which results, therefore, is the difference in the spirit which animates both student and teacher. It is wonderful, indeed, to observe the difference in the interest, the enthusiasm, and the energy with which a student will pursue a course of study which he himself has chosen, in contrast to that which he has been compelled to take.

CONCLUSION.

In conclusion, I desire to request a free and frank discussion of this important subject, which my paper has presented in only a superficial manner. While there is no doubt that too little attention was formerly paid to the specialties, I believe that we are going to the other extreme and trying to teach too much. We are giving too much detail, and are wasting valuable time in the attempt to cover the entire subject with all the theories and varieties of diseases that to us as specialists seem important. Neurologists, dermatologists, ophthalmologists, and other ologists who work along specific lines are apt to become narrow and overestimate the importance of their particular branch, and to forget that there are other branches more essential in fitting a man for practice. We must bear in mind that we are educating our students to become general practitioners, and it is not within the scope of the undergraduate medical college to make specialists of them. If we occupy more of their precious time than is necessary to teach them only those things which are essential to their general practice we are stealing time which should be devoted to the more important fundamental branches.

DISCUSSION

ON THE PAPERS OF DRS. BAKER AND TODD.

Dr. Swan M. Burnett, Washington, D. C.—The proper consideration of this proposition implies a definition of several terms, and the answers to some collateral questions.

In the first place, what are we to understand by the term "general practitioner"? Ordinarily, we mean the man who gives his attention to internal medicine alone, to the exclusion of the well-recognized specialties, in which case he should be considered quite as much of a specialist as the ophthalmologist or gynecologist; or, we may mean the man of whom the country doctor, or the members of the medical branches of the army and navy are the types, who are expected to combat all human ills from toothache to those diseases demanding an abdominal section or the ligation of the large arteries.

Evidently, the needs of each of these extremes of general practice, as regards the use of the ophthalmoscope and test lenses, must be widely different.

Then, again, what are we to understand by a "working knowledge"? Is it meant mere ability to illuminate the fundus by the ophthalmoscope, or the power to elect any changes, however minute, from the normal; or, in the case of test lenses, the capacity to do more than establish the existence of hypermetropia or myopia, or possibly the presence of astigmatism?

As a necessary corollary to these questions, arises the equally important one, how much pertaining to these subjects shall be taught to the undergraduates in our medical colleges?

To state, categorically, my own opinion, formed after a by no means inconsiderable thought and observation, I believe that, barring the very exceptional cases, the less the general practitioner of any kind has to do with a practical working of the ophthalmoscope the better, and for the following reasons:

First, ophthalmoscopy is an art, and an art for the average man by no means easy to learn, and, moreover, an art which requires constant practice and a large experience to bring to such a state of efficiency as to enable it to be of certain benefit to the man who employs it. Here as elsewhere, "a little knowledge is a dangerous thing," for it is just those cases where it would be of most service to the general practitioner that require that expertness without which confusion is sometimes worse than confounded and absolute harm may come through a false diagnosis. The ophthalmoscope to be of any real value to the practitioner must be used by an expert. Such an expert is to be found around the corner in even our small towns now, where eye specialists abound. I have never yet seen a general practitioner whose ophthalmoscopic knowledge was likely to be of any benefit to himself or to his patients. There are, of course, exceptional cases where this broad rule does not apply. A clever and enterprising general practitioner may take up ophthalmoscopy as a fad, just as he would go into stamp collecting, or painting in water colors, or for the purpose of impressing his patients with his wide attainments, but like fads in general, it will not redound in the end to the permanent good of anybody.

Of all the general practitioners it would seem that the members of the medical corps of the Army, Navy and Marine-Hospital Service, who are often far removed from expert skill, and have to depend upon themselves alone, would be required to possess such a "working knowledge" as we are now discussing—and, as a matter of fact, it is announced as one of the requirements for admission to these services. But, I find after inquiry that it is practically a dead letter, and that while a knowledge of the working of the ophthalmoscope is placed to the credit of the candidate, in the same way as the knowledge of another language would be, an actual test is seldom or never made, and mainly for the reason that the examiners themselves, as a rule—and I place it to their credit —do not deem themselves competent to conduct such an examination. It should be stated in this connection, however, that Surgeon-General Sternberg informs me that in the Army Medical School, which he has established in Washington, the use of the ophthalmoscope is now practically taught to the young medical officers.

That an expert familiarity with the ophthalmoscope might at times be of value to the country doctor is also to be admitted, but here again, unless this knowledge be thorough, it is much more likely to lead him into trouble than out of it. All of us remember the marvelous and unique pathologic conditions of the fundus we were constantly running up against, particularly congestion of the retina, in our callow days of ophthalmoscopy. Of all the methods of physical diagnosis, that of ophthalmoscopy requires most skill and the largest amount of experience to make it at all serviceable to the examiner, and such skill and experience the general practitioner can never, from the nature of the circumstances, have. It follows as a necessary corollary, if the position I have taken is a tenable one, that we should not demand that the average undergraduate should waste his time in attempting to acquire a "working knowledge" of an instrument he will never use. When we shall have established, as we must in time, the elective system in our medical curriculum, then those who elect to take an ophthalmoscopic course should be thoroughly instructed in the use of the instrument, and for this purpose one hour a day, for three months at the very least, should be given to each student. Most students will require twice that length of time, and some even more, before they can command such a skill in the manipulation of the instrument as to give them confidence in its use. The time given to the useless and unfruitful effort to give the average undergraduate a "working knowledge" of the ophthalmoscope would be much better spent in acquainting him with the external diseases of the eye and particularly the diagnostic signs of iritis, conjunctivitis, glaucoma and the various forms of keratitis.

It goes without saying, of course, that the principles of ophthalmoscopy should be taught as a part of physiologic optics, as forming an essential portion of that general and fundamental knowledge of the functions of the human economy that is necessary for a complete medical education such as we propose to furnish.

It is well, in my opinion, for a general practitioner, particularly when removed from a competent specialist, to be able to test visual acuteness and to determine by means of test lenses the probable existence of myopia or hypermetropia and possibly astigmatism. Anything more refined than this should not, as a rule, be attempted, though the ability to test the refraction of the eye and determine the muscular imbalance carefully would be of infinitely more value to him in the diagnosis and treatment of the cases that he has most to deal with, particularly headaches and obscure nervous symptoms, than the ability to use the ophthalmoscope even with skill.

Dr. Casey Wood, Chicago—Most of us are guided in the opinion we form as to the advisability of teaching ophthalmoscopy to general students of medicine by the number we have to deal with. Those of us who have large classes appreciate the difficulties more than those who are not called on to instruct such large numbers. I may be pardoned for telling you something of the methods employed in the University of Illinois, because I believe they have a direct bearing upon the whole question.

After serious consideration of the subject, and after conferences between the professors of ophthalmology and their assistants we decided on this plan: that one man should give the "didactic" lectures in such a manner as to make his teaching plain not merely to those close to him, but to those who are, perhaps, forty feet away. To this end lectures are profusely illustrated by large charts, the stereopticon and the projection apparatus, and though that has not been, perhaps, quite satisfactory in teaching certain portions of the subject to a class of over 200, yet it has, I think, answered fairly well. With the projection apparatus, for example, one can throw a picture 14 feet square on a sheet, which can, of course, be seen in detail by men at a considerable distance from the lecturer.

Operating before a large class we have abandoned, because we have found it in every way unsatisfactory; the earnest teacher does not wish to feel that he is a party to such waste of time. To do a cataract extraction before a class of two hundred men, for example, benefits nobody except a few students on the front row of seats. It is much the same with the exhibition of patients; only those cases that exhibit signs of disease visible to students on the distant seats are shown. Thus we dispose of the didactic part of the teaching. For complementary studies the large senior class is divided into small sections so that patients with the commoner diseases of the eye can be successfully exhibited to them. Pretty much the same thing is again demonstrated in the dispensary. We insist upon it, also, on all occasions, that the eye signs of disease are as necessary for the general student as the heart and lung sounds. Why should the undergraduates avoid a study of the eye signs of disease? Yet that is just what in the past they have done. To arrive at a proper diagnosis they learn all the other symptoms of disease, but decline to investigate disease from the standpoint of the eye symptoms and we insist upon it that these are as important for this purpose as any other clinical evidence.

In the third place we have endeavored to teach students not merely the diagnosis and treatment of the commoner diseases of the eye, but the differences between eye diseases that are serious and those that are simple. We started out by having a program printed, a copy of which is given to each student, who is told that he will be expected to pass an examination upon these headings, and we do not deviate from it. We have not succeeded nor have we attempted to make good ophthalmoscopists of our students even in this way; I do not think it is possible, for example, in the time at our disposal, to teach the undergraduate the use of the ophthalmoscope so that he can diagnose any except gross lesions of the fundus with any certainty. Perhaps it is possible to teach the ordinary student to diagnose such a fundus change as a marked case of optic neuritis, or, he may learn to see the fundus or to make some use the trial case, but I protest against the attempt to teach him that complex branch known as "refraction." I would rather have the patient go to an ordinary optician than have the average medical graduate work out a case of refraction. This contingency it is not necessary, I think, to meet in the West where almost every small town has a competent ophthalmologist. I do not believe in the danger suggested by Dr. Baker, that the people of this country will be neglected because of lack of ophthalmologists to look after their eyes.

Another experiment we have been trying is somewhat opposed to that entered on in other universities. The latter insist on the men having an academic training for the first two or this four years, obtaining their instruction in the university itself. They are not allowed to look at sick men and women, but give up their entire time to the elements of medicine and surgery. We have taken an opposite view of the matter and give clinics to freshmen and sophomores, in imitation of the good old days when the student went around with his preceptor. It is certainly popular with the men themselves and so far has succeeded very well indeed. We give these junior students much the same work we give the seniors. The printed program just alluded to is closely followed and if at the end of the session students can not diagnose a case of iritis, detect one of glaucoma and recognize the ordinary external diseases of the eye, then the man engaged in the teaching has fallen far short of the scheme so mapped out.

Dr. W. H. Wilder, Chicago—This is a subject that has interested me greatly for a number of years as it has happened that I have had something to do with the scheme now in vogue in Rush Medical College.

I am heartily in accord with the views of Dr. Baker, that the general practitioner should know something of ophthalmology, and can not agree with Dr. Burnett, that the less he knows of the ophthalmoscope the better.

I can give you more clearly my views by telling you the character of work done in the Rush Medical College—which is the medical branch of the University of Chicago. In the first place, our students pursue the first two years in the university proper, in the biologic laboratory, and when they come to us they are prepared to apply the theoretical, scientific knowledge which they are supposed to have obtained in the university itself. The elective system has been in operation for a number of years. While a man can elect a certain course, he is required not to elect too many of the same kind at one time. He can elect a course in ophthalmology if he will, but can not omit such important things as obstetrics or surgery. He is marked in each subject according to the number of hours he takes. We find the method very satisfactory because there is a spirit existing between instructor and student that formerly did not exist when these studies were required. He is allowed to elect ophthalmology as one of his senior studies and we advise him to pursue the following course: first a course in the fundamental principles of ophthalmology; then a course in use of the ophthalmoscope, and finally he is put in the clinic, because not until then has he the tools with which to work. In his earlier clinical work we give him cases that illustrate normal conditions. He gets a course of didactic lectures, or rather recitations, in a limited class; following that a course in the use of the ophthalmoscope, and not until he has had these two courses does he engage in clinical work. We believe that a small class is essential, never exceeding ten, and that, of course, requires a large number of teachers. Our clinical classes in the eye and ear infirmary are limited to ten men and they can get as close to the operator as the assistant who is helping and in this way we can give them practical instruction. A man can watch the case through the whole course. He is never allowed to do clinical work until he has learned the method of examination of patients. He is not judged by his ability to make a diagnosis so much as by his ability to observe a case properly and bring out the salient points. If he has acquired correct methods of observation he deserves more credit than when he steps up to a case and makes a "snap-shot" diagnosis. We teach our undergraduates something of the use of the ophthalmoscope. We keep tabulated lists of cases scattered around town and we sometimes pay them a little to keep them coming to us just as they do in the clinics of Vienna and Berlin. The student is told how to use the ophthalmoscope and is required to make a drawing of the interior of the eye, just as he is required in the histologic laboratory to make a drawing of the section under the microscope. In this way the examiner can tell whether the man really sees what he says he does.

I think from the examination of the students that they do learn something about it. Of course, they can not become experts, but they can recognize promptly a normal or abnormal disc and have sufficient knowledge to enable them to know whether blindness is due to opacity of the media or to gross lesions of the fundus.

Dr. Edward Jackson, Denver—I think the discussion of Dr. Burnett on the teaching of ophthalmoscopy to medical students in general should not go without some additional remarks. I want especially to call attention to the value of ophthalmoscopy as a branch of general education for the medical man. There have been several very noteworthy instances of its cultivation by other than ophthalmologists—Hutchinson, Hughlings, Jackson, Gowers and others whose training in ophthalmoscopy aided them in becoming eminent in other fields; and who have spoken with strong emphasis of the value of that training in their subsequent careers. It is not only the value of using the ophthalmoscope, but the general training of the work of exact observation. We are trying to raise the requirements of the medical course and encouraging the development of laboratory courses, and it seems to me that in this connection the ophthalmoscope has been very greatly neglected.

Admit, for the sake of argument, that very few medical students learn to use the instrument so as to make a diagnosis of brain tumor or Bright's disease; the same thing is true with reference to the microscope. The ophthalmoscope is a microscope, a low-power microscope, the kind that is of the greatest value to the student, and it is a microscope used on living tissue. I think that the teaching of ophthalmoscopy as a branch of general medical training is not sufficiently appreciated even by ophthalmologists themselves; and I should regret to see this discussion go out without some expression of an appreciation of that value.

Dr. George F. Suker, Chicago—I think it has been the experience of most of us who teach that unless the student can see a cataract operation, or some major operation, he does not take very much interest in the subject. I think it is absolutely essential the way the curricula of our colleges stand now, that every student who is graduated should be able to describe the normal fundus, if nothing else. And, I make it my aim to pay particular attention to the normal fundus rather than to diseased conditions. The medical student does not and can not appreciate the dainty pathologic fundus lesions unless he fully knows the appearance of the normal fundus. If we can impress on their minds that in so many general diseases it is necessary to make an ophthalmologic examination so as to fully understand the case in hand we will not have labored in vain. But, in order to imbue the student with the importance of ophthalmoscopy it is the duty of the teachers in the various other branches to call especial attention to such diseases as have ocular lesions.

If the student is able to fully recognize the variety of normal fundi, he then can recognize an abnormality and if we achieve this in our teaching, why, a great deal will have been accomplished. In order to accomplish anything along the line of ophthalmoscopy, we should endeavor to give individual irstruction to our students and not, as is often done promiscuously, turn a score of them loose on a patient in the dark room without sufficient guidance.

Dr. Leartus Connor, Detroit—The principles of educating a student should be scientific and if scientific each part would be symmetrically related to every other as in a surgical operation and there would be one thought running through the whole thing. Applying this to teaching as we generally find it you will observe that there is much to be desired. Students should have this training if for nothing else than to let them see that there is something that is absolutely certain in medicine and absolutely certain in their work. It lets them see that somewhere there is a rock on which to stand. There is so much of uncertainty in medicine that it is too bad to prevent the attaining of what is definite. The teacher in each branch should be able to present the eye features of his own subjects, and so the student can see these in normal relations. I do not think as a Section we can lay down any dictum. It remains for the teachers of each college for itself to get together and determine what can be left out and what must be put in. I am impressed with the belief that the time is not far distant when we will have such a scientific arrangement of teaching as we do in the best surgical operations and that it will be just as satisfactory. I am glad this subject has come up for our consideration, not that we can settle it, but that we can have some influence in promoting a correct solution of the problem.

Dr. Herman Knapp, New York—Whenever a new department is added to the curriculum and the final examination of the student there is a howl, and so it has been with ophthalmoscopy. At the University of Columbia (N. Y.) there was no question asked in ophthalmology until fourteen years ago, when, after Dr. Agnew's death, I made it the condition of my acceptance of the professorship that ophthalmology should be a recognized branch in the curriculum, that the professor should be paid, that he should examine the students and give the markings in his branch at the graduation. The immediate consequence was that the same rights were accorded to the other so called clinical professors. Now our students have didactic demonstrative lectures in the college and clinics, in sections in the hospital and are trained in functional examination of the eye and in the use of the ophthalmoscope, the drill courses, in sections are obligatory, and the student has to hand in his certificate of attendance when he presents himself for his final examination.

Dr. Burnett said 'a little knowledge is a dangerous thing," but who of us can say that he knows all? Our knowledge is all relative and there is nothing of which we know enough. We have to learn what best we can and even the little we have learned is frequently very useful—of which ophthalmoscopy gives plain testimony. I do not think any retrograde movement should be encouraged. Our college course has been lengthened and probably will still more be lengthened, until the time and facilities are sufficient for the average student to acquire by scientific study and methodical training, practical knowledge to diagnose and treat all the patients that will come before him.

Dr. Crumb, Utica, N. Y.—I think it is of decided advantage for every student to have a practical training in ophthalmoscopy. It is of advantage to the physician as well as to his patients, and also to the oculist, for if a man has had any training in ophthalmoscopy he soon learns to appreciate the difficulties in being skilled in its use and it gives him more respect for those who are expert and he will not be so apt to send his cases to the optician. We have instances in our city where good members of the American Medical Association send their cases to the optician for refraction, which is certainly decidedly wrong and the younger members of the profession, who have some knowledge of ophthalmoscopy, do not do it.

Dr. Carmalt, New Haven—I really think this discussion belongs to some other Section than ours. We are all well enough convinced that ophthalmology should be taught in the general course and I agree with all that has been said in regard to its importance. Certainly, any general practitioner who attempts to do anything with nervous and various constitutional diseases must use the ophthalmoscope constantly and ophthalmology should have just as important a place in the curriculum of study as surgery and medicine. It is a part of these general branches. In the Yale Medical School we have examinations, and the students must attain their marks which stand in the same relation as any of the other special branches. I think it belongs to other sections to speak of its importance. We have no doubt about it.

Dr. F. W. Higgins, Cortland, N. Y.—There is quite a large class of specialists in our Section who think that the less the general practitioner knows of the ophthalmoscope, the better. I can only speak on the question from the point of personal experience. Like some of the others here I first learned the use of the ophthalmoscope in my own office. We were general practitioners not satisfied with the knowledge given us by our schools. Lately much good work has been done in microscopic examination of the blood, but none of us who were graduated a few years ago were instructed in the technic. If we wish to keep up with the most improved methods of diagnosis we must do so in our own offices by grinding out the subject for ourselves. That is what I did with the ophthalmoscope. I have had two assistants in my office that I had no trouble at all in teaching to use the ophthalmoscope. It is easier than teaching them to use the microscope. To begin with, the dilated pupil is the whole secret. If we do that in fifteen minutes we can teach a student to see the fundus. I think we should do a little missionary work among the general practitioners. There is no danger that they will all become oculists. It is true that many physicians do not know how to use a microscope, but it seems to me that no doctor should be satisfied who does not own and use a microscope and an ophthalmoscope.

Dr. Frank Allport, Chicago—In my own teachings I have purchased some twenty five papier mache eyes and before my students undertake to look into the human eye they go into the dark room with a row of these eyes, each student with his own ophthalmoscope, and they work on these until they are quite capable of examining the human eye with dilated pupil.

Dr. A. R. Baker, Cleveland—About all I want to say has been said and I only add that if, as Dr. Knapp has stated, it must be a dull student, indeed, that can not see the fundus in five minutes it is scarcely necessary to waste time on the papier mache eyes. Because all of us do not become expert with the stethoscope is no reason why it should not be taught. It devolves upon us to educate the general practitioner in this matter. I was taught as a student that I should not attempt to learn the use of the ophthalmoscope, but that I should always send all eye cases to the specialist, and I am afraid there is a tendency to that kind of teaching to day. We should try to get away from that idea. The subject can not be taught in large classes, the classes should be composed of from three to five, at the most. If you try to teach twenty or forty, you will always fail.

Dr. F. C. Todd, Minneapolis—The discussion has turned to the teaching of ophthalmoscopy to undergraduates, and while, as I said in my paper, I believe that a certain amount of ophthalmoscopy should be taught, it is a question how much should be required. It has been stated by some who have taken part in the discussion that they require undergraduates to learn ophthalmoscopy thoroughly. Where have these students gone who have been taught ophthalmoscopy? I rarely ever see a general practitioner, even among the younger men, who knows anything about the use of the ophthalmoscope. I hope they will come along later.

It is evident from this discussion that there is a vast difference of opinion as to the things that should be taught and the methods that should be used, but evolution in teaching medicine is going on and we seem to be following the example of teachers in academic work who make a study of pedagogy. We have adopted the graded system of instruction following their example and many of the medical schools are adopting the elective system, which has been so long in use in university education. If we are to teach ophthalmoscopy thoroughly it must be made an elective, for there is not enough time to teach anything more than the rudiments in the required course.

Dr. Swan M. Burnett, Washington—I only want to say a word more and that is to make a plea for honesty in our teaching. We claim to teach our students to use the ophthalmoscope and we do not do it. They do not, as a rule, know any more practically about it when they go out of our schools than when they come in. The proper teaching of ophthalmoscopy, I assert, can only be done under the elective system. You can not teach it in any practical way in less than six months. There is not a general practitioner that I have seen, nor a recent graduate, to whom the instrument is anything more than a toy. I simply want us to do rightly what we claim to do, or not attempt it at all.

PSYCHOLOGY OF HABIT IN SURGICAL TECHNIC.

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Medical writers agree as to the necessity for a good technic, but have been singularly silent as to how to acquire it. Too much is taken for granted. Too little study has been given to detail. No effort has been made to separate the things which are always done by habit, from those which must always be done by thought and reason. Much of this is due to a lack of understanding concerning the psychology of habit.

By far the greater part of our work is done without a thought of how it is done. Rarely can a man correctly state the moves he uses to dress himself, to cleanse his hands or to prepare a field for operation. It is much like giving a good definition for such familiar terms as "climate," "a cold," etc. Many, however, can tell exactly how to tie the latest fancy bow tie. Many can give Dr. ——'s method of sterilizing his hands; Dr. Kelly's method of catheterizing the ureter; can define karyokinesis accurately or describe fully the features of bubonic plague.

The question arises: Why do we understand difficult matters and show an utter lack of understanding of the details of simpler matters?

In the first group of examples the lessons were learned before we began to apply reasoning power to an act. At this time we acted by instinct and gradually drifted into the ways of nature. As soon as we learned an act it was turned over to the custody of our master, habit, which we may say never changes and never allows an investigation.

The cases or acts of the second group are more difficult. They come to us by hearsay; necessarily require analysis, and their infrequency or our lack of familiarity with them has prevented us from turning them over to the custody of habit. It is probable that few surgeons can recall the time when they have studiously applied their minds to the performing of every detail of a surgical operation. The fact is that we can not be positive after we have done an operation whether we have observed every point in technic, but we are willing to risk our habits to carry us through safely. We unconsciously rely on the subconscious mind to tell our objective mind if our muscles do something wrong.

DEFINITION OF HABIT.

We speak of certain acts as being nothing more than habit; but do we fully understand what we mean by the word habit? James says: "The most complex habits are nothing but concatenated discharges, due to the presence there of a system of reflex paths, so organized as to wake each other up successively, the impression produced by one muscular contraction serving as a stimulus to provoke the next, until the final impression inhibits the process and closes the chain." James further states: "In action grown habitual, which instigates each new muscular contraction to take place in its appointed order, is not a thought or a perception, but the sensation occasioned by muscular contraction just finished. A *strictly voluntary action has to be guided by an idea,* perception and volition through its whole course. In a habitual action mere sensation is a sufficient guide, and the upper region of the brain and mind are set comparatively free. In habitual actions the only impulse which the centers of idea or perception need send down is the initial impulse, the command to start."

He further illustrates this point by comparing the formation of habit to water, which "In flowing hollows out for itself a channel, which grows broader and deeper, and after having ceased to flow, it resumes, when it flows again, the path assumed by itself before. Just so the impressions of outer objects fashion for themselves in the nervous system more and more appropriate paths, and these vital phenomena recur, under similar excitements from without, when they have been interrupted a certain time."

The psychology of habit may be very aptly likened to a phonograph or kinetoscope, which reproduces the voice in the one case or a moving image in another thousands of times exactly alike, due to a very delicate impression or path made on a plate by a sound in the one case and an image in the other. This little path or impression is very delicate, and yet so accurate that when the little machine is set to work the exact modulations of the voice are produced in the one case and the exact movements of the body reproduced in the other.

The spinal centers controlling the muscles are even more accurate than these little machines, unless their delicate structures are marred by having conflicting impressions which blur them and produce many uncertain paths, causing the muscles under control of these centers to act in uncertain ways. The muscles under control of the spinal centers can be taught to act automatically with as much accuracy as the little instruments mentioned, if they are rigidly trained to a certain act by the thinking mind for a sufficient number of times; but if a number of methods are being taught alternately the impressions made on the centers would be like a phonographic plate which carries the impression made by two different songs or speeches.

NATURE OF HABIT.

In discussing the nature of habit Dumont says: "By habit a violin used by a master for a number of years acquires beautiful tones because the fibers of the wood at last contract habits of vibration conformed to harmonic relations."

James, in another place in illustrating the power of habit, refers to the case of Rip Van Winkle in Joseph Jefferson's play, who always excuses himself for every time he is drunk by saying, "I won't count this time." James says: "Well, he may not count it, and a kind heaven may not count it, but it is being counted none the less; down among his nerve cells and fibers, the molecules are counting it, registering and storing it up to be used against him when the next temptation comes."

RESULTS OF HABIT.

The results of habit as given by James are: "First, it simplifies the movements required to achieve a given result, and makes them more accurate and diminishes fatigue. The second result of habit is that it diminishes the constant attention with which our acts are performed."

Dr. Maudsley says: "If an action became no easier after being done several times: if the careful direction of consciousness were necessary to its accomplishment on each occasion, it is evident that the whole activity of a lifetime might be confined to one or two deeds—that no progress could take place in development. A man might be occupied all day in dressing and undressing himself; the attitude of his body would absorb all his attention and energy; the washing of his hands or the fastening of a button would be as difficult on each occasion as to the child on its first trial, and he would, furthermore, be completely exhausted by his exertions. Think of the pains necessary to teach the child to stand, of the many efforts it must make, and of the ease with which it at last stands, unconscious of any effort."

Carpenter says: "Our nervous system grows to the modes in which it has been exercised." James thinks "The hell endured hereafter, of which theology tells us, is no worse than the hell we make for ourselves in this world by habitually fashioning our characters in the wrong way." James also states: "Already at the age of 25 you see the professional mannerism settling down on the young commercial traveler, on the young counselor-at-law, and on the young doctor. You see the little lines of cleavage running through the character, the tricks of thought, the prejudices, the ways of the shop; in a word, the way in which a man can by-and-by no more escape than his coat-sleeve can suddenly fall into a new set of folds. On the whole, it is best he should not escape. It is well for the world that in the most of us by the age of 30 the character has set like plaster and will never soften again." So we see the habit is both our master and slave. It controls our most essential acts and yet performs practically all the menial services of ordinary life.

APPLICATION TO SURGICAL TECHNIC.

In applying this matter of psychology of habit to surgical technic the chief point is that neither the surgeon, his assistants nor his nurses can devote the mind to every little detail which is performed. The mind must be applied to the points of work which require judgment and the higher sense of reason; the details must be left to what is known as muscle sense, or spinal sense, or habit. If these actions are to be performed by the muscles, these muscles or spinal centers must be educated, and as they are not possessed with the power of reason they will act like the parrot—only as they are taught. Therefore, the principal point in arriving at a good surgical technic is education of the muscle sense.

If the parrot is to be taught to say prayers only it must never be left where it can hear profanity. If the muscles are to be taught correct methods in surgical technic they must never be permitted to act in an incorrect manner.

It is a very serious matter, during the course of an operation, if a nurse or an assistant, or the surgeon himself, becomes so engrossed with some difficult problem which comes up that he entirely loses himself so that instead of doing the right thing in the way of technic his muscles perform some old method learned years before which has proven disastrous on many occasions and which he has tried in vain to forget. An important point for us to consider, therefore, is the early education of our muscles, in one good way, so that when storms arise and when troubles come the chances are many to one that they will do right.

PATHS OF HABIT.

The paths of habit in the nervous system are all so delicate and so accurate that such a small point as having had our attention called away from our work while washing our hands early in our career may be the beginning of a habit which from that time on has caused us to neglect some little point of the surface of our hands. It may be only one corner of a certain finger nail, or a very small area in the space between two fingers, but we may rest assured that under ordinary circumstances we will neglect this space with as much certainty as that a seed will reproduce its kind, and this may be the cause of the fatal cases of sepsis for which you could in no way account.

I have no patience with the old excuse that "sepsis will occur without apparent cause in the practice of the very best men." When we have sepsis in a clean wound we may know some one has infected the patient. It may be the surgeon, his assistant or his nurse, but some one is at fault, and I think the primary blame must rest on the surgeon himself, for he must be responsible for the training of his assistants and nurses. This applies, not only to the cleansing of the hands, but to every point connected with surgical cases.

HOW TO ACQUIRE GOOD HABITS.

It is a fact that it is almost impossible for one to change his technic after he has operated for a number of years; if he has not already acquired a fairly good technic his patient will suffer because of his methods.

If he has acquired a good technic it is not his own acts that he fears, but the acts of his assistants and nurses. The question then is, how can he most quickly and most effectually train his nurses or students so that they will perform their duties in a correct manner at all times and under all circumstances?

I know of no rules better than a modification of the principles laid down by James. First, take care to launch your students with as strong and decided initiative as possible by teaching them the importance and value of habit, and that they must depend largely on habit for results. Second, never allow an exception to pass with impunity until the new habit is successfully rooted. After a number of months' practice in the same groove the nervous system will act infallibly right.

Almost nothing has been written in the form of a text on this subject. Nurses and doctors have each learned their particular method, not seeing any two persons with exactly the same technic. Their teachers have not seen fit to call their attention to the small details, or have not noticed all this. The consequence is that a wrong habit has been fixed. For instance, a physician has acquired the habit of washing his hands for five minutes. If you watch him you may notice that four minutes of this has been spent in rubbing the ends of his fingers to and fro along the brush, one-half minute has been spent in scrubbing the palms of the hands, one-third has been spent in making an occasional excursion over his hands, and one-twelfth of a minute has been spent in making an occasional tour over the hands and arms, while the spaces between his fingers have received very little attention. Another operator may reverse this order and devote a great deal of time to some point which has not been mentioned, but in not a single instance has he given a thought to what he is doing or whether all the points of the surface of his hands have been cleansed.

A nurse in preparing for a gynecological operation may first scrub everything from the tip of the coccyx to the pubes into one mass, and then begin by infecting the entire field. The brush is dipped back into the pan of water and soap, is plunged into the vagina, is again brought out and scrubbed over the external genitals, again into the vagina, and so on in rotation, infecting the entire field. In consequence the field has not received the best opportunity for being cleansed and still a much longer time is required than if the work had been done in a systematic manner.

In expressing my ideas and the method of instilling habits into the nervous system of pupils I can probably do no better than to state the method I have adopted in teaching surgical technic to the nurses of the North Pacific Sanatorium.

OUR METHOD.

We have our work printed in a little pamphlet entitled "Methodical Technic," which we use as a text, in which is described every detail. Every move in performing each act has been thoroughly studied before it has been adopted. Having been adopted it is followed to the letter, and we admit no other way than "Our way" for cleansing the hands: there is no other way than "Our way" for cleansing a field for operation: there is no other way than "Our way" for performing any of the details pertaining to surgical technic, unless it be by a special order of a physician in attendance. Every act must be first learned by a direct concentration of the mind on the details under supervision of the head nurses.

As an illustration of what I mean by detail, I will give a method of cleansing the hands.

METHODICAL CLEANSING OF THE HANDS.

1. With sterilized liquid green soap and sterile brush scrub the hands from the wrists down in the following order: Begin with the thumb on the left hand and scrub the thumb thoroughly in the following order: Radial side, dorsal surface, palmar surface, radial side again, end of finger and nail, root of nail, ulnar surface of thumb, interdigital space, radial side of index finger, dorsal surface, palmar surface, radial side, end of finger and nail, root of nail, ulnar surface interdigital space, radial side of middle finger, etc. Studiously scrub under and around every portion of the nail and surface and the space between the thumb and the index finger. Scrub the index finger likewise, carefully concentrating the mind on every move of the brush and paying special attention to the interdigital space. Continue across the hand, taking in all the fingers in a similar manner. Then take the thumb on the right hand and proceed across the right hand in like manner. Now begin again and scrub the left hand as a whole, beginning on the thumb side, passing over the back around the little finger across the palm and back to the thumb. Include the wrist in this scrubbing. Then a general repetition over the entire hand in the same manner, including the nails. Then the right hand in a similar manner.

2. Put down the brush and with a sterile nail file carefully clean under and around each nail, beginning with the left thumb, and take every nail in the order given for the scrubbing.

3. Soap the arms and hands from the elbow down with sterile green soap. Take a fresh sterile brush and begin with the left arm and scrub down to the wrist. Scrub the right arm in like manner. Then begin with the thumb and scrub the hands in the manner described in the first step.

In the formation of these habits the nurses must not be allowed to begin at any other point or to proceed in any other order than in the one laid down. There is no especial virtue in beginning at this particular point, but every time the hands are scrubbed in this manner the groove is deepened and the habit thus fixed which is to become indelible.

This process of washing the hands must be done at least once a day when the nurse is off duty, in order that she may devote her mind exclusively to directing the excursion of the brush over her hands. This is much more difficult for the graduated nurses or the operator than for the pupil nurse or student.

GENERAL RULES.

The following general rules are given:

1. Avoid contact with septic material the same as if you had no water, no chemical antiseptics and no artificial protection for the hands.
2. In preparing the hands or a field for operation do your work as thoroughly as if you had handled the most virulent septic material and had no antiseptic solution or artificial protection for the hands.
3. Use chemical germicides as faithfully as if you had handled septic matter, had not had the opportunity of using soap or water and had no rubber gloves.
4. When rubber gloves are used no less precaution should be exercised than if they were not to be used.
5. After these steps have been followed out avoid contact of the supposedly sterilized articles the same as if no cleansing had been done by either of the preceding methods.

These rules are given with the understanding that there are conditions under which they can not be carried out. These exceptions are given in a general way. If these rules are constantly borne in mind you will instinctively refrain from unnecessary handling of septic material.

Having come in contact with septic material you will instinctively refrain from touching anything with your hands until you have given them a thorough cleansing. Having mechanically cleansed your hands you will instinctively feel that they are still septic until you have used an antiseptic agent. Having cleansed everything as thoroughly as possible, you will still instinctively avoid unnecessary contact.

SUMMARY.

In summing up, we may, for all practical purposes, state that habit is a channel in the nervous system formed by the performance of a voluntary act, which channel becomes deeper each time it is used, but the wall of which is weakened when a varying or conflicting method is substituted. This difference may be likened to the difference between the channel of a river which has run for thousands of years in the same channel forming a deep canyon, and a river which runs through a sandy valley and which changes its bed to suit the various circumstances and climatic changes. We may say that habit is a mossback; is self-satisfied and never changes. Habit is a part of nature herself; is always true, therefore nothing can be safely delegated to habit which is subject to change. A surgical operation can not be delegated to habit, because we rarely find two conditions exactly alike. It always requires reason. In short, everything which can be made perfect should be delegated to habit. Nothing should be delegated to habit which is untrue or varying.

In instilling a habit first decide definitely what you want to teach. Second, do not overlook or neglect a single point or take anything for granted. Third, see that every point is carried out to the letter under the direction of a close observer. Fourth, accept no other way or excuse until the habit you wish to form is a part of the nature.

THE TEACHING OF THERAPEUTICS AND PHARMACOLOGY FROM THE EXPERIMENTAL STANDPOINT.

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INTRODUCTORY.

The most conspicuous tendency in the evolution of scientific instruction has been toward the introduction of laboratory methods: toward the substitution for authoritative statement, of direct observation, independent reasoning and a spirit of criticism. This method is particularly useful in medicine: for a student of the medical sciences is never merely a student, but by the very requirements of his calling he must be trained as an independent observer and thinker. The problems which his profession places before him can rarely be settled by reference to authorities, but must be approached by methods essentially similar to those employed by the experimental investigator. The training of a medical student should therefore be along experimental lines. Nevertheless, it is scarcely too much to say that teaching on an experimental basis is still in its infancy in medical schools. Reasons for this are not far to seek: Experimental medicine is of recent growth, and its introduction into teaching has been hampered by the existing organization of the medical schools: by the large number of students in comparison with the laboratory facilities: by the meager salaries of the instructors—in a word, by insufficient endowments. These adverse conditions still persist to a great extent, but the importance of scientific medicine has come to be so generally recognized that all difficulties had to be surmounted. Even the lowest types of medical colleges pretend to offer some laboratory courses.

It is a still more encouraging sign of the times, however, that the leading medical schools base their claims to leadership, not on the number of their students, but on the excellence of their laboratory instruction, including in this term the teaching of clinical subjects on a similar plan. Colleges less fortunate in their facilities are following this lead to the full extent of their resources. As a result of this tendency, medical teachers are being called on to organize new methods of instruction in an ever-increasing range of subjects. In this reorganization the instructor is at present thrown largely on his own resources, and his previous experience is of but limited applicability. He must practically start anew and learn by his mistakes. The waste along every line, which is inseparable from this method, could be greatly diminished if the beginning instructor could have access to the experience of others who have organized similar courses. It would therefore seem desirable that the instructors of such branches in a number of representative schools should publish in sufficient detail the organization and methods which have proved most successful in their experience. These outlines would supply valuable hints to schools in which new courses are in process of organization. They would serve to bring to the attention of even experienced instructors valuable features in the methods of their colleagues. They would have a tendency to foster uniform standards of instruction and requirements. Nor would such papers be without interest to the profession at large, for it may safely be affirmed that every practitioner is, or should be, interested in the advance of medical instruction.

That the desirability of such descriptions of new methods of teaching is being generally recognized is shown by the appearance, within recent years, of several monographs.[1] This recognition has encouraged me to present an outline of the course of pharmacology in actual operation in the institution with which I am connected.

PHARMACOLOGY A LABORATORY SUBJECT.

Therapeutics, or pharmacology, is peculiarly a laboratory subject. No branch of medical knowledge is more susceptible of experimental demonstration; none demands so imperatively an appeal to experimental methods and reasoning for its proper understanding. This view of therapeutics led me to the organization of a course which gives great prominence to experimental facts and principles. In substituting this experimental course for the older didactic method, the transition need not be abrupt. Demonstrations may at first take the place of the laboratory work, or the latter may be made elective. Indeed, the real essential is that the instructor cause the student to look on the subject as one capable of being treated by actual observation, experiment and independent thought. Laboratory work is, of course, a most potent means to this end. The instructor in a large subject like pharmacology must have a clear and definite idea of what he wishes to accomplish and of what he considers essential for the student to acquire. These aims he must take pains to keep constantly before the class. The course outlined by me is intended to furnish the student with an accurate knowledge and understanding of those facts about drugs which presumably will be useful to him in practice; to teach the effects as much as possible by direct observation: to foster a critical, inquiring, scientific spirit, independent thought and observation, and finally to give an introduction into the elements of research. To accomplish these objects the teacher does not teach in the ordinary sense—that is, didactically—but contents himself with encouraging, outlining, guiding, correcting, explaining, etc., the independent inquiries of the student, and in ascertaining that the work is done in a proper manner, and that the results come up to the set requirements.

GENERAL PLAN OF INSTRUCTION—REQUIRED WORK.

Lectures.—These are intended to give the student a general idea of the theme to be studied; to explain how to study this theme: to bring out the relative importance of particular facts or theories; to elucidate obscure or difficult points; to introduce the latest discoveries, and, finally, to give the teacher an opportunity to infuse into his subject and teaching the personal enthusiasm, interest, life and color, which can, after all, be given in no way as well as by oral lectures.

The lecture will naturally divide itself into three parts: 1, Outline of the subject; 2, elucidation of difficult points, and 3, new discoveries. To cover these subjects the lectures need not be exhaustive, since the student is expected to do his studying from his text-books. One lecture to three or four recitations suffices as a rule. The lectures should, if possible, be preceded by whatever elaborate demonstration is necessary. Simple experiments, diagrams, etc., are introduced directly into the lectures. The latter should be sufficiently short to hold the full interest of the students and teacher. Forty-five minutes are usually ample. During the fifteen minutes following the lecture the lecturer will answer informally individual questions by the students. The latter may also utilize this time to examine the materia medica specimens. The lectures are particularly a function of the head of the department. Attendance should not be obligatory.

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[1] "On the Teaching of Pharmacology, etc." John J. Abel, Philadelphia Medical Journal, Sept. 1, 1890. "Some Forms of Apparatus, etc." E. T. Reichert, Univ. of Pennsylvania Medical Bulletin, June, 1901. "Physiology at Harvard," William T. Porter, Boston.

Recitations.—These are intended to accomplish the following: For the student they furnish a definite plan of study; help in fixing facts in the memory; bring out important points; teach him to keep his knowledge accessible; correct erroneous impressions; help to explain obscure points in the text and give opportunity to ask questions and to present his own views. To the teacher they give opportunity to develop the details of the subject systematically; to correct omissions in lectures; to bring out the way the subject should be studied; to judge the progress of the class and the individuals; and for deductive explanations.

To accomplish these objects the teacher, with the book before him, asks questions, in a systematic order, so as to cover the subject with fair completeness. The questions should be of such a nature as to bring out the knowledge of the student and to ascertain how thoroughly he understands and has mastered the facts. They should have a scope sufficiently wide to permit the student to develop the subject himself, the teacher interposing minor questions to give the recitation more of the nature of a discussion than of a recitation by rote. If a student blunder, another should, if possible, be made to give the right answer. The questions should never be leading; misleading questions are permissible. The teacher should return to the student until he has convinced himself of the knowledge of the latter, and should then give him a grade—preferably on the basis of ten.

For these recitations a certain number of pages of the text-book—from 8 to 15—should be assigned, the aim being to give a rounded-off subject. This should have been previously covered by lectures and demonstrations; but for certain subjects, or when time presses, recitations alone may suffice. It is recommended that the class have a uniform text-book, which should be in harmony with the general spirit of the course. I have elaborated a volume for this special purpose.[2] Collateral reading is also encouraged. The recitation may occupy the full hour, and may be given either by the head of the department or by assistants, according to the importance and intricacy of the subject. Attendance should be compulsory on three-fourths of the recitations, unless special excuses are accepted.

Demonstrations.—As many as possible of the important facts which are not covered in the laboratory work, should be verified by demonstrations. Simple experiments which consume only little time may well be worked into the lecture; longer experiments are given in a separate hour. The demonstrations should be so made as to be also lessons in technic and in observation. They should be accompanied by suitable remarks, which may be more empiric than in the lectures or recitations. Questions by the students should be encouraged. The demonstrations should be so arranged that they may be witnessed in detail by all members of the class. The latter must, if necessary, be divided into sections. A demonstration should not, as a rule, last over one hour, and, if possible, not more than forty-five minutes. The demonstrations may be given by the head of the department or assistants; or by advanced students under the direct supervision of the former. Attendance on three-fourths of the demonstrations should be compulsory, unless special excuses are accepted.

Laboratory Work.—The student, before beginning his pharmacologic work, should have mastered the technic of physiologic experimentation. The main object being to obtain results on the action of drugs, the preparation of the material for the experiments should be done by the staff as much as possible, the student thus having left more time and energy for the main object. If the students have not had sufficient preliminary training the experiments as given must be shortened and the course correspondingly extended. As the action of drugs always shows sufficient variation to leave a large scope to individual observation, it is better that the student should know what phenomena to expect, so as to seize the main results. Experiments can be carried out most successfully, and observations made most fully and accurately, when 6 men work on a mammal or 3 on a frog. The different manipulations and classes of observations should be made to alternate between the different members of the section, under the direction of the instructor. The latter should supervise not more than 18 men; and not more than 50 men should work in any room at one time. Chemical experiments should be made individually by each man, and one instructor will suffice for twice the above number.

Every subject covered in the laboratory should be preceded by a special "laboratory talk." This should take up the results to be expected; the deductions to be drawn from them; the points on which the observations should especially be made to bear; the explanation and demonstration of technic, etc. These talks are given whenever occasion demands, and may cover several laboratory exercises. For subjects not yet covered in lectures, the talk should be by the teacher otherwise it may take more of the form of a quiz.

During the laboratory exercise itself the instructor should confine himself to seeing that the work is properly done, and to giving indispensable help. The students should be encouraged to rely on their own resources, and their attention should not be distracted by quizzing. When some result of unusual interest is obtained by one of the sections the instructor may call the other men to witness it and he may give a brief extempore talk.

Unnecessary conversation, laughing, whistling and loud talking should not be tolerated. Each student must clean his working place before leaving the laboratory. If the apparatus permit, the entire class or section should work on not more than two experiments at the same time. This concentrates the attention of both students and instructor. On the other hand, the instructor should not allow a new experiment to be performed until all previous ones have been finished in a satisfactory manner. For this reason one day in four in the chemical work and one day in three in animal work should be left free for the repetition of faulty experiments. Those students who are not required to repeat experiments may elect to do additional experiments on these days.

With large sections it will be found better to have one-half of the section doing frog work, the other half mammal work. This requires less apparatus and gives some elasticity to accommodate an often fluctuating supply of mammals. The two halves alternate on successive days.

Laboratory Records.—Each section must keep detailed records of the results of the experiments in blank books furnished by the laboratory. The blanks for vivisections have printed headings.[3] Each report must be signed by the student reporting. At the end of the laboratory course these books must be provided with an index, as for example: "Strychnin: Exp. 2, page 1; Exp. 4, page 8; Exp. 5. page 10," etc. The books and tracings are then handed in, graded and retained on file in the laboratory. Students may copy whatever they wish from these records and tracings may often be returned on application to the instructor.

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[2] T. Sollmann: "A Text-Book of Pharmacology." W. B. Saunders & Co.

At intervals a laboratory discussion is given. This is made to cover the two or three preceding experiments, questions being asked by the instructor to bring out the results, which are then discussed by the class. This discussion should be conducted by the head of the department. The remainder of the laboratory work may be given by assistants under the supervision of the head of the department. Three to four hours should be allowed for each vivisection experiment, two hours for frog experiments and one to three hours for the chemical experiments. Attendance on four-fifths of the actual laboratory work should be compulsory and insured by roll-call.

Materia Medica.—This subject is taught in direct connection with pharmacology, the idea being to familiarize the student with the preparations in which the drugs may be prescribed: their dose, miscibility, general appearance and physical characters. On account of the very great number of practically obsolete drugs and preparations, this requires careful selection.

A rather extensive collection of materia medica comprising organic and inorganic drugs, their preparations, active principles, etc., is kept easily accessible in glass cases. They are arranged by the groups used in the teaching. Each bottle, in addition to the name of the contents, bears one of the following labels: "Strong Poison, Do Not Taste," printed on red paper; "Poison, Taste Cautiously," printed on blue paper, or "Practically Harmless," printed on green paper. Also one of the following white labels with the imprint, "Identification," in red letters, "Important" in blue letters, or "Unimportant" in black letters. The "Identification" bottles contain the specimens which the student must be prepared to identify. They are always placed toward the right hand of the shelves. The bottles are numbered consecutively and by shelves and cases, there being a card index to the collection. A single key fits all the cases, and will be lent to any student on application. There is also an herbarium and a collection of water-color illustrations of important plants.

These collections are utilized as follows: They are brought out and placed on the lecture table during the preliminary lecture on the group, the lecturer calling attention to the characters of the more important specimens. They are examined by the students during the quarter hour following the lecture. They are then exposed on a side table in the lecture room for one week. The "Identification" specimens are then placed on a conspicuous shelf in the lecture room, easily accessible to the students, and left there until the end of the course. During the recitation a few specimens considered in the preceding lecture are passed around for identification. The "important" and "unimportant" specimens are returned to the museum at the expiration of the week. The students are directed to study the specimens in such a way that they will be able to name the "Identification" drugs from the unlabeled specimens; with the "Important" they should be able to say whether or not an unlabeled specimen could be, for instance, arsenious acid; while the "Unimportant" need merely be glanced over.

Prescription Writing.—The systematic study of this subject comes in the early part of the course in the sophomore year. After a quiz on the book, five hours of exercises and five lessons for home-work are given at convenient times, to illustrate the construction of prescriptions and the manner of prescribing different classes of preparations—such as liquids, pills, ointments, etc. For this purpose four men are called to the blackboard; the instructor gives out two prescriptions, in the briefest shape possible, one to each alternate student. These the students write out; they are then criticised by the class and the instructor; and four other students are called up, etc. Prescriptions are similarly assigned for home-work, and are graded and returned by the instructor.

In the junior year five hours and five home lessons are distributed through the year, the exercises being conducted in a similar manner. In these drills the application of a given group of drugs, or the treatment of a given condition of disease, is given out, the students being required to fill in the necessary details according to their judgment.

Incompatibilities.—The most important incompatibilities are brought out in the laboratory work or shown in a demonstration. They are then recited on in three hours. Incompatible prescriptions are placed on the blackboard about ten times at intervals during the course; these are criticised by the students, the rule according to which they occur being every time quoted in full. A similar course is followed when incompatibilities occur in prescription writing.

OPTIONAL WORK.

The following courses of conferences, theses and research are designed to foster original thought and investigation by the students. An hour a week for eighteen weeks is given to the discussions; conferences alternating with theses. The program is announced in advance. Experimental research is specially arranged for.

Participation in these courses is purely voluntary, but they deserve the active support of the students on account of their importance and in return for the sacrifice of time and labor on the part of the instructor.

Conferences.—These comprise three heterogeneous features: The question box, reading of abstracts and compilation of reports.

The Question Box.—This feature is designed to open for discussion questions which are of especial interest to the class, outside of the order treated in the lectures. A box is kept in the lecture room into which students may place questions, signed with the name of the enquirer. These questions are answered at the discretion of the instructor in the conferences within two weeks. Any question relating to pharmacology will be considered pertinent. The answer may, however, take the form of a reference to the place where further details may be sought.

Abstracts and Criticism of Original Papers.—Even the most advanced text-books give an inadequate idea of the spirit of an advancing science. This can only be obtained by research and the perusal of original papers. The latter has the further advantage of familiarizing the student with the methods of keeping up with the progress of medical science.

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[3] The table is headed: Date —; Section —; Reporter —; Experiment Number —; Animal —; Age —; Sex —; Anesthetic —; Then follow columns for recording the following: Time; Drug; Dose pr. Kg.; Strength of Solution; Manner of Injection; Heart: Rate, Regularity, Tracing and Strength; Respiration: Rate, Strength, Tracing; Blood Pressure: Mean Height, Extremes, Respiration Variations, Tracing; Urine, Flow; Venous Pressure; Intestine: Color, Peristalsis.

To secure this object the students who are willing to participate in this feature of the course are requested to hand in cards bearing their names and a list of the languages which they can read. The instructor selects a number of names and gives to each an original paper,[4] which is to be abstracted and returned within two weeks. The abstracts should be from about 100 to 500 words, and should consist of a table of the contents of the paper, an outline of the method adopted, and the conclusions, with criticisms and suggestions for further research. The abstract should be, as far as possible, in the student's own words. The abstracts are handed in to the instructor and criticised by him. When the student wishes to be assigned another paper he again places his name in the box. From these abstracts the instructor will select a certain number to be read before the class in the conference hour. These will then be subjected to criticism by the class and instructor, as regards the paper, the subject and the abstract itself.

Compilation of Reports.—The drafting of conclusions from the facts furnished by a considerable number of experiments possesses great importance—not only in experimental research. but also in clinical observation. As a practice in this class of work the reports on experiments on file in the laboratory, as well as the tracings relating to them, will be given out to volunteers. The instructor will outline the manner in which the compilation is to be made. The student will then draw the conclusions justified by the experiment. and submit them to the instructor. At the discretion of the latter these will be read and criticised in the conference. The work must be handed in within two weeks. The general treatment is to abstract the important points from each report, and from these results to present a picture of the action of the drug under the condition of the experiment.

The compilation may bear either on a given experiment—say Exp. 2, Mammals; or more usefully on a single drug, or one of the phases of its action, such as the action of strychnin on the circulation and respiration; the action of drugs on the eye. etc. The effects should be noted, qualitatively and quantitatively, for different doses and time of action. The results should be presented both by "means" and averages. Important representative tracings should form part of the report. General conclusions should be drawn as far as the data permit. Special attention should be given to atypical and unusual results. If the student desire, he may make this compilation the basis of a thesis by enlarging on the general bearing of the results, comparing them with the statements of text-books and investigators, etc.

Reading and Discussion of Theses.—This feature is intended to give the students practice in writing, reading and discussion of papers. The students who wish to participate in this course are requested to hand in their names to the instructor. A week before the meeting three names are chosen by lot from these cards. The first drawn (A) will preside during the meeting—the first two or three meetings, however, being conducted by the head of the department. The other two (B and C) will lead the discussion. All three will be expected to familiarize themselves with the subject and to prepare beforehand a list of topics for discussion. The function of the instructor during these meetings will be merely that of advisor to the chairman and of final critic.

The value of the course will depend largely on the discussion following the paper. It is the duty of the chairman to see that this discussion is generally participated in. He also passes on the topics for discussion and places a list of them on the blackboard. Questions of fact are referred by him to the reader, or to the men leading the discussion. The chairman is at liberty to devise his own program. The following is submitted for his guidance:

1. Reading of paper.
2. Suggestion of topics by reader, B, C, class, A, instructor. Of these the chairman will make a selection and write these on the blackboard in the order in which he wishes them discussed.
3. Question of facts and observation, B, C, class, A, reader, instructor.
4. Statement of views and theories, with reasons for same (order as in 3).
5. Discussion of views and theories (order as in 3).
6. Summary by the instructor.

In case the reading and discussion of a thesis occupies more than one meeting the chairman will be retained until it is disposed of.

The Theses.—The papers should aim to give either an original presentation of a subject, or a critical compilation of the literature, or to bring out and discuss obscure and disputed questions concerning the theme. The themes of theses may be any subjects connected with pharmacology, as any pharmacologic group, such as antipyretics, atropin, local anesthetics, etc.; or the pharmacologic treatment of any disease or condition, as, for instance, pneumonia, pain, etc.; or the treatment of cases under the writer's observation; or summarized reports of experiments or research; or historical or bibliographical.

The titles of the theses read in 1902 will give some idea of the scope of this course:

Hot, Cold and Vapor Baths; Their Clinical Effect.
Medullary Stimulants.
The Food Value of Alcohol.
Cocain, Historical Survey of Research on.
Cocain, Collection of the Laboratory Experiments on Frogs.
Caffein, Pharmacologic Summary.
Picrotoxin, Effects on the Frog.
Fish-poisons.

The writing of theses is entirely optional and the choice of the subject is also left to the student. They will be read in the order in which they are received, the program always being announced a week in advance. It is well for the instructor to suggest at first some topics from which selections may be made. In writing theses the aim should be conciseness combined with clearness. All interesting matter pertaining to the subject should be presented, but the topic should be sufficiently restricted so that the reading of the paper should not extend over 15 minutes—5 to 10 pages quarto. Only one side of the paper should be written on, and a wide margin should be left for notes. The reader will also make a brief report of the discussion and append this to his paper. The theses are kept in the files of the laboratory. The reading of the paper should be done slowly, emphasis being laid on important points. The mere reading of figures, etc.. should be avoided. When figures, curves, etc., occur in the paper these should be placed on the blackboard before the meeting. A talk from notes may take the place of a regular thesis if preferred by the student.

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[4] The following journals will be found most useful in this connection: Am. Jour. of Physiology (Boston); Journ. of Experimental Medicine (Baltimore); Journ. of Medical Research (Boston); Journal of Physiology (Cambridge, England); Archiv f. Experim. Path. und Pharmakol. (Strassburg); Archives International de Pharmacodynamie (Paris).

Experimental Research.—Research by the students is encouraged in every way possible. All the resources of the laboratory and the advise and aid of the research staff are placed at the disposal of those willing and able to do research, without cost, except for animals or unusual apparatus or material.

Research work is divided into the following classes: 1. Assistance to the research staff. 2. Verification of a published research. 3. Joint research with a member of the research staff. 4. Independent research of subjects selected by the student or suggested by the instructor, under the supervision of the latter.

Students or others who volunteer will be assigned to one or the other of these classes at the discretion of the instructor according to their ability, previous experience or other conditions.

REVIEWS, TESTS, EXAMINATIONS AND GRADING.

Reviews.—The reviews are intended to cause the student to review the subjects covered, in order to impress them collectively and in their relation. They also aid, of course, in remembering and in preparing for tests. They are given as quizzes, the main or representative facts being brought out by rapid questioning. No grades are given. The reviews follow closely on the conclusion of the corresponding chapters and are announced three weeks in advance. They cover:

1. Sollmann's Pharmacology,	Chapters	1 to	6	inclusive.
2. "	"	"	28 to 32	"
3. "	"	"	7 to 16	"
4. "	"	"	17 to 23	"
5. "	"	"	24 to 27	"

Just preceding the final examination these review quizzes are repeated.

Written Tests.—These are given to control the progress of the students and to train them in the writing of papers. The papers are graded by the instructor or assistants and returned to the students; the grades in recitation, etc.. to date are also noted on the papers. The instructors will positively not discuss these grades with the students. All possible care is used to make the grading just and exact, and it would consume altogether too much of the instructor's time to justify and argue his decision with each student.

The questions in these tests are such as would be given in regular examinations. Each question counts an equal number of points. Each test includes about three questions and five specimens, and one hour is allowed for the answering. The tests cover the same subjects as the reviews and follow the reviews in about two weeks.

Final Examinations.—The examinations are written, oral and practical. All are intended and arranged so as to give a real conception of the knowledge of the student, rather than make him conform to any arbitrary standard; this is the cause of the division into the three above captions. The final examination covers the entire subject. The written and oral examinations are given in the first and last week of the school year.

The Written Examination.—A list of questions, of which the following is an example, is submitted to the students. The questions should be as general as possible.

1. Write a prescription for a diuretic mixture containing (a) a drug stimulating the renal cells; (b) one acting as a salt or alkali; (c) as an organic irritant; (d) as a cardiac tonic; (e) flavor, vehicle, etc. Write the names without abbreviations, and give the quantities in both metric and apothecaries' systems.

2. Describe the different ways in which antipyretics may act, and the ways of differentiating between these. Give examples.

3. Discuss the theoretical basis of the action of potassium iodid.

4. Name one or more drugs which may be employed to secure: (a) stimulation of the arterial muscle; (b) paralysis of arterial muscle; (c) paralysis of vagus ganglia; (d) stimulation of vagus center; (e) stimulation of cerebral cortex.

5. Name six of the most important emetics, stating dose for adults (metric system).

6. Discuss fully the pharmacology, symptoms, antidote, and therapeutics of one of the following drugs: Aconite, acids, mercury.

7. Identify the 20 specimens submitted, giving correct Latin name, and the dose.

8. Explain the incompatibilities in the three prescriptions submitted to you (7 and 8 are graded separately).

The questions are to be answered in writing as exhaustively as the time (three hours) will permit. Nothing is taken for granted which is not unequivocally stated in the paper. Every point covered by the questions should be fully treated in the answer; but nothing should be stated in the paper which is not directly asked for in the questions. Some attention should also be given to style. It is suggested that in writing out the answers the student should dismiss at first whatever points he does not feel certain of, and should fill these in only after he has answered those questions which he knows more fully.

Oral Examination.—Each student is examined for ten to thirty minutes, or until the examiner is convinced that he has the range of the student's knowledge. It is the object of the examiner to conduct this quiz in such a way as not to confuse the student; in case a wrong answer is given the instructor will attempt to find out whether this is the result of confusion or ignorance.

Supplementary Examination.—If the attendance on recitations has not been satisfactory the student will be required to take a supplementary examination of a somewhat more severe grade than the regular examination. If the grades of the class work, oral and written examination are conspicuously at variance, the student will be cited to furnish an explanation of the discrepancy, and may be subjected to a supplementary examination. This may be written or oral, at the discretion of the instructor.

Laboratory Examinations.—These immediately follow the conclusion of the chemical and animal laboratory work. Only students whose laboratory attendance has been satisfactory will be admitted. The object of these examinations is to judge the ability of the student to do laboratory work. To arrive at this he is obliged to work out independently certain problems which are to some extent elective; the use of books is permitted, and the instructor will give whatever aid he considers indispensable. At the conclusion of the laboratory work a list of five to twenty problems is posted. These involve principles similar to, but not identical with, those of the regular experiments. Within a week each student must make a choice of three of these problems, one of which will then be assigned to him for solution. Small sections will begin their work each week, under the personal supervision of the staff. The problems will be so arranged as to require from five to twenty hours of work, and the results must be presented in the form of a thesis. Students may elect to take regular research work in place of the laboratory examination. The grading will take account of the difficulty of the problem, the time required, the method pursued, technic, the results and the thesis.

The following list of questions from the examination in chemical laboratory work of the past year will give an idea of the scope of these examinations:

a. Investigation of the incompatibilities of certain substances, mainly alkaloids or new synthetic compounds.
b. Isolation of a given constituent from a drug.
c. Effect of pepsin on ferments.
d. Effects of antiseptics on ferments.
e. Effects of antiseptics on bacteria.
f. Laking agents.
g. Chemical assay of a vegetable drug.
h. Testing drugs for purity.
i. Investigation into the chemical reactions of synthetic substances.
k. Making a line of pharmaceutical preparations.
l. Making a toxicologic analysis.
m. Investigating microchemical reactions.
n. Methods of estimating the amount of digestion.
o. Isolation of poisons from urine.
p. Determination of lethal doses on frogs.

Grading.—In determining the final grade of the student a system should be used which is sufficiently rigid to secure a uniformity of standard, and yet sufficiently elastic to allow for the personal judgment of the instructor as to the student's qualifications. It should take account both of the quality of the class work throughout the year and of the final knowledge as shown by the examination. I have elaborated the following scheme, which seems to me to secure these objects as well as can be and which I have applied with satisfaction:

a. All the grades of the student are carefully looked over, and a grade assigned to him without any mathematical computation, from judgment and from personal knowledge alone.

b. 1. The grades of the recitations and tests are averaged, and calculated on a basis of twenty-five. 2. The grades of the daily laboratory work, laboratory examinations, prescription writing, and examination questions of identification of specimens and incompatibilities are averaged, and calculated on a basis of twenty-five. 3. The grades of the written and oral examinations are averaged and calculated on a basis of fifty. The sum of these gives the calculated grade.

c. (*a*) and (*b*) are compared: If they approach within five points, as is almost invariably the case, the average is taken. If a larger discrepancy exists, the cause of this is inquired into and the grade adjusted accordingly. The student then may, if necessary, be required to take the supplementary examination.

The following two examples, taken from the record of the last class, will illustrate:

	Student X.	Average on basis of 100.	Student Y.	Average on basis of 100.
Grades on a recitation basis of 10.	6, 8, 10, 9½, 9, 10, 10, 10.	91	8, 8, 4, 8, 8, 7, 5	69
Tests on basis of 100.	66, 94	80	62	62
Daily laboratory work	. . . .	95	. . . .	87
Laboratory exam.	. . . .	95	. . . .	90
Prescription writing on basis of 10.	9, 10, 8, 10, 10, 10, 9, 9½	95	9, 9, 8, 7, 8, 9, 6	80
Identification exam.	. . . .	75	. . . .	90
Incompatibilities examination. . . .	. . . .	90	. . . .	60
Written examination.	. . . . . .	99	. . . .	34
Oral examination. . .	. . . .	92	. . . .	65

Following the plans given above, there results:

	Student X.	Average on basis of 100.	Student Y.	Average on basis of 100.
Adjudged (by Plan *a*).	. . . . .	95	. . . .	63
Figured (by Plan *b*)	. . . . .	92	. . . . .	61½
Accepted as real final grade . .	. . . . .	94	. . . . .	62

ORGANIZATION OF THE PHARMACOLOGIC LABORATORY.

The object and general methods of the laboratory course have already been sufficiently outlined. The text-book gives a series of finished experiments, but these may be enlarged or modified at the direction of the instructor, the book furnishing sufficient hints for this purpose. In this connection it may be said that, if time and material permit, it might be preferable to cut down the length of experiments and give a larger number. The best way, however, to accomplish this is to let the students work on an experiment, and if this does not come to satisfactory conclusions, to let them begin next day where they left off. When dogs are difficult to obtain, experiments on rabbits may be used for all but blood-pressure work. Cats answer well for all experiments.

Arrangement of Sections.—The students are divided into sections; six for mammals, three for frogs. These sections the men are asked to organize for themselves; those who have not joined a section when laboratory work begins will be assigned to one by lot. Every student is considered responsible for the results of the entire experiment, although a definite part is assigned to him particularly. When his own part does not demand his entire attention he is expected to give aid to the other members of the section. The student in charge of the section is to attend to this and to give directions, decide on methods, etc. He should also bring with him a list of the reagents and apparatus required for the experiment, so that there may be no delay in getting these out. The members of each section are lettered A, B, C, D, E and F. To secure a proper rotation of the work this is divided and exchanged as follows:

FROG WORK.

Place 1.—In charge of entire experiment; in especial charge of experiments on eyes, and of electrical apparatus.

Place 2.—In charge of drum and tracings, and of experiments on heart and muscle, and of cleaning.

Place 3.—In charge of report, of operations, and of experiments on heart and muscle.

A and D, B and E, C and F always have the same place; in the first experiment A and D have Place 1, etc.; in the second experiment A and D have Place 2, C and F Place 1, etc.

MAMMAL WORK.

Place 1. In charge of the entire experiment; preparation of report; observation of general condition of animal.

Place 2.—Taking of notes; giving of anesthetic; general aid in operations; respiration tracings.

Place 3.—Operations and attachment of apparatus in neck; making of injections; observations on heart; pulse and respiration.

Place 4.—Operations and attachment of apparatus to thorax; blood-pressure tracings.

Place 5.—Operations and attachment of apparatus to abdomen; observations on abdomen or vein manometer; cardiac tracings.

Place 6.—Calculation of doses and preparation of solutions; artificial respiration; subsidiary experiments; cleaning.

A will have Place 1 with the first experiment, Place 2 with the second, etc.

Equipment.—The laboratory should be supplied with chemical work tables and sinks; a fume chamber; large water bath for 40 and 100 degrees C.; dog and rabbit boards; analytical balance; scales weighting 0.01 gm. to 20 gm.; 1 gm. to 3000 gm. and 100 gm. to 50 kg.; large bottle with siphon for normal salt solution 0.75 and 0.9 per cent.; large bottle of anesthetic; jar for distilled water; jars for waste; bone shears; bellows (14x20 inches); operating instruments for instructor; tables, etc. The cost of this common apparatus, outside of tables and the analytical balance, need not exceed $50.

The tables are solidly constructed of pine and receive two coats of boiled oil. They are 36 inches high; the tops are of 1¼-inch board and project 2½ inches beyond the legs. Each section should have two tables—one 36x36 inches for apparatus, and one 20x60 inches for animals. The head-fasteners and screw-eyes for securing the animals may be attached directly to the latter table, thus doing away with separate dog-boards. The apparatus tables may also have the manometers permanently fixed to them.

Students' Equipment.—Chemical Work.—Two men are assigned to each locker, and each man is furnished with a key. The lockers contain the material enumerated below. If the laboratory does not possess a sufficient number of a given apparatus, this may be kept out and assigned on requisition. The same holds true of animal experiments. Additional apparatus may also be obtained on requisition. All charges are made against the locker. Before being assigned to a locker each student must make a deposit of $2.

CONTENTS OF CHEMICAL LOCKERS, FOR TWO MEN.

Article.	Cost per Piece.	Cost per Set.[5]
1 Bunsen burner and tube	$0.40	$0.40
2 rings	.35	.70
1 wash-bottle, 1 L.	.75	.75
2 evaporating dishes, 10 cm.	.30	.60
2 funnels, 6 cm.	.10	.20
2 beakers, 25 to 100 c.c.	.17	.34
2 flasks, 250 c.c.	.18	.36
2 tumblers	.05	.10
50 test-tubes	.03	1.50
2 test-tube racks	.30	.60
2 test-tube brushes	.05	.10
1 sponge	.05	.05
1 earthen jar	.10	.10
2 exercise books	.25	.50
1 test-tube clamp	.05	.05
1 mortar, 7.5 cm.	.40	.40
1 pill tile, 12x12 cm.	.40	.40
1 spatula, 10 cm. blade	.25	.25
1 pill box	—	—
1 powder box	—	—
1 graduate, 25 c.c., conical	.35	.35
1 tripod	.25	.25
1 iron waterbath and tripod, 13 cm.	1.60	1.60
1 thermometer, 0-100 degrees C	1.00	1.00
1 separator, 250 c.c.	1.50	1.50
1 spectroscope	6.00	6.00
2 watch-glasses, 1½ inch.	.05	.10
1 towel	.10	.10

The cost of a complete chemical equipment for two men therefore amounts to not more than $19, and by having the more expensive apparatus in common it may be reduced to $10.

Animal work.—Six men are assigned to each locker, the key of which is kept by the instructor and given out by him on application from a member of the set.

CONTENTS OF ANIMAL LOCKERS.[6]

The letters after the name of the article refer to the source whence they may be obtained.[7]

Article.	Cost per Piece.	Cost per Set.
2 drums (*a*)	$12.00	$24.00
2 induction coils (*a*)	5.00	10.00
2 electrodes (*a*)	—	—
2 contact keys (*a*)	1.00	2.00
3 dry batteries (*d*)	.25	.75
1 bichromate battery (*d*)	1.25	1.25
Insulated wires; 8 coarse and 4 fine	—	—
1 spool thread	$0.05	$0.05
1 spool silk	.05	.05
2 aneurism needles (*d*)	.35	.70
2 frog needles (*c*)	—	—
2 pithing needles	—	—
2 muscle-levers (*a*)	1.05	2.10
2 heart-holders	.75	1.50
1 cork of pins	—	—
6 cork boards	—	—
2 boards for frog circulation	—	—
2 beakers, 50 and 100 c.c. (*b*)	.15	.30
1 funnel, 6 cm. (*b*)	.10	.10
3 tumblers	.05	.15
1 earthern jar	.10	.10
Reeds and straws	—	—
1 gag	—	—
2 *sponges*	.05	.10
3 towels	.10	.30
2 porcelain capsules, 10 cm. (*b*)	.30	.60
1½ gal. tin bucket, with hook	.10	.10
2 10 gm. weights (*c*)	—	—
1 250 c.c. flask (*b*)	.18	.18
1 stomach catheter (*d*)	.25	.25
50 cm. glass syringe (*b*)	.20	.20
4 bull-dog forceps (*d*)	.35	1.40
1 aspirator syringe	1.00	1.00
Large and small aspirator needle (*d*)	.20	.40
1 thermometer 1-100 degrees C. (*b*)	1.00	1.00
1 clinical thermometer (*d*)	.60	.60
1 respiration bottle (*c*)	—	—
2 rods for lever respiration (*c*)	—	—
2 retort standard 1/15 in-1/20 in. (*b*)	.45-.65	1.10
3 clamp fasteners (*b*)	.25	.75
2 burette clamps (*b*)	.75	1.50
1 ring (*b*)	.35	.35
2 Bunsen burners with tubes (*b*)	.40	.80
1 tambour (*a*)	1.00	1.00
1 suture needle (*d*)	.10	.10
1 mercury manometer (*a*)	1.00	1.00
1 water manometer (*c*)	—	—
3 pipettes (*c*)	—	—
2 feathers	—	—
2 frog-report books	—	—
1 mammal-report book	—	—
Set of ligatures, heavy cotton	—	—
Set of 6 blood canulæ (*c*)	.10	.60
Set of 3 tracheal canulæ (*c*)	.10	.60
Set of 3 urethral canulæ (*c*)	.10	.30
1 bladder canula	.15	.15
1 frog's aortic canula (*a*)	.10	.10
1 T-piece, large (*b*)	.25	—
1 Y-*piece small* (*b*)	.25	—
1 Y-piece large (*b*)	.25	.75
Rubber tubing, 3 oz. (*b*)	.20	.60
10 test-tubes (*b*)	.03	.30
1 test-tube rack (*b*)	.30	.30
2 Mohr's clamps (*b*)	.15	.30
2 valves for William's apparatus (*b*)	.35	.70
1 *screw clamp* (*b*)	.30	.30
2 wire bull-dogs (*b*)	.15	.30
1 Woulf's bottle, 2 necks, 250 c.c. (*b*)	.45	.45
1 bell jar, narrow, open neck 1 L (*b*)	.45	.45
1 fine forceps (*d*)	.50	.50
1 tripod and gauze (*b*)	.25	.25
1 25 c.c. measure (*b*)	.35	.35
1 test-tube brush (*b*)	.05	.05
1 curved iron clamp (*a*)	.15	.15
Sealing wax	—	—
Parchment	—	—
1 heavy weight for mammalian heart	—	—
1 small drawer for transporting	—	—
1 box labels	—	—
1 set dog ropes (*c*)	—	—
1 set rabbit ropes (*c*)	—	—
2 binding screws	.05	.10
1 injection burette	1.40	1.40
1 mortar and pestle, 7.5 cm.	.40	.40
1 glass rod	—	—

It is requested that these pieces be kept in their proper drawers. A tool-chest will answer very nicely. The cost of the apparatus for a set of six students will not exceed $65.

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[5] The prices are those quoted by a large firm dealing in such supplies and are those charged to students. When chemical apparatus is imported duty free, the cost of the college course will be considerably less.

[6] Very excellent and low-priced physiologic apparatus is manufactured under the supervision of the Harvard Medical School, and may be obtained through Prof. William T. Porter, Boston.

[7] *a*. Harvard, see note 6, above. *b*. Chemical Supply Houses. *c*. Home-made. *d*. Surgical Instrument Stores.

Animals.—The animals are only given out on requisition. Each section of six men is entitled to 50 frogs and 12 mammals. Animals beyond this number will be charged for at the rate of 10 cents for each frog, 60 cents for each rabbit or dog and 40 cents for guinea-pigs.

Reagents.—Two sets of the more commonly used reagents and one set of those more rarely used are placed on each table intended to accommodate six men. These are arranged alphabetically and numbered consecutively, the student being requested to replace each bottle in the proper order as soon as it has been used. The only exception to this are the reagents for experiments 5 and 9, a set of which is kept on a separate shelf. It is the duty of the assistant to see that the bottles for the current experiments are properly filled.

For the animal experiments a special shelf is kept on which bottles of all reagents for each set are arranged alphabetically and properly numbered. The reagents for the current experiments are removed to a separate and easily accessible shelf. The Harvard plan of having but one stock bottle for each reagent, a dozen empty bottles for each set and a set of exchangeable tag labels—the bottles for each set being relabeled and refilled for each experiment—could be substituted. The cost of reagents for the chemical and animal work need not exceed $100 per year for a class of fifty students.

ARRANGEMENT OF TIME AND SUBJECT MATTER.

A course of the kind which I have outlined above. and including pharmacology, in relation with therapeutics and toxicology, materia medica, pharmacy, prescription writing and laboratory work requires:

Hours for regular lectures, demonstrations, tests, reviews and other class-room work	110
Hours for elective conferences and theses	18
Hours for laboratory	120
Total hours	248

In our course part of this work is placed in the last weeks of the sophomore year, part continues through the junior year, the juniors receiving 77 hours of class work, 70 hours of laboratory work and 18 hours of optional conferences. The sophomores receive 34 hours of class work and 48 hours of laboratory work. The hours are distributed as follows:

SOPHOMORES.—After March 1—Class-work: Monday and Tuesday 10 to 11, Thursday and Friday 9 to 10. Laboratory work: Monday and Tuesday 11 to 12, Thursday 10 to 11, Friday 10 to 12.

JUNIORS.—Class-work, entire year, Monday and Thursday 8 to 9, after January 1: Monday 2 to 3. Laboratory work: To January 1, Monday, 12.30 to 4; Wednesday 3.15 to 6.15. Optional conferences and theses (alternating) after January 1, Wednesday 3 to 4.

DISTRIBUTION OF LECTURES, RECITATIONS, DEMONSTRATIONS.

The following will give an idea of the hours allotted to each subject:

	Lectures.	Recitations.	Demonstrations.
Pharmacognosy, pharmacy, pharmaceutical assaying, toxicological analysis, flavors.	1	8	4
Prescription writing	—	10	—
Introduction to pharmacology	2	1	—
Strychnin, caffein and picrotoxin groups.	1	4	2
Morphin, cannabis, hydrastis, cocain groups	1	4	1
Atropin, nicotin, pilocarpin, physostigmin, etc.	1	4	1
Internal secretions, emetics, aconite, veratrin, quinin	1	4	1
Coal-tar derivatives, toxins	4	3	—
Hydrocarbon narcotics,	1	4	1
Gases, camphor, cyanids, nitrites	1	2	1
Digitalis, ergot, sapotoxin	1	4	1
Salt action	2	3	—
Ion action of neutral salts, acids and alkalies	1	4	—
Systemic action of metals	1	3	—
General irritants	1	4	—
Stomachics, cathartics, anthelmintics	—	3	—
Demulcents, emollients, nutrients	1	2	—

In concluding, I wish to reiterate that my purpose in writing this paper has been, to place before the profession *one* scheme of teaching these subjects. I feel convinced that similar expositions from other teachers, either in journals or by correspondence, would be of great mutual advantage.

THE PLACE AND IMPORTANCE IN THE COLLEGE CURRICULUM OF MATERIA MEDICA.*

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Notwithstanding that about 95 per cent. of medical practitioners devote nearly their entire time to the practice of internal medicine by the application of remedies found in the materia medica, the greatest interest in the profession is centered upon therapeutic agents other than medicine. Looking over the programs of several state medical societies it is observed that nearly all the papers read are along the lines of surgery or some kindred topic. In the smaller medical societies only an occasional hour is given to the subject of materia medica or therapeutics. The text-book of to-day on internal medicine devotes little space to the treatment of disease and almost none to subjects pertaining to our materia medica, while whole volumes in surgery are devoted to surgical therapeutics. Among the younger members of our profession the brightest minds are allured by the brilliant successes of surgical therapeutics. Our pathologists study their science from an anatomic standpoint almost to the exclusion of functional pathology, and, indeed, some of them say there is no pathology when no structural changes are noticed, however evident the functional disturbance may be.

In the curricula of our medical colleges a great percentage of the time is given up to surgery, surgical anatomy, surgical pathology and kindred branches, while materia medica and its sister branches of pharmacy and therapeutics are given a minor place.

A surgical clinic attracts a large audience, while only a few remain to witness a clinic of internal medicine, and then the clinician seldom discourses upon that which he hopes will effect a cure for his patient. I do not speak of this state of affairs as a protest against the indifference for the consideration of our subject, but hope to call attention to the facts as they exist and see if we can locate the cause for this condition in the education of the doctor.

The reason that surgery is so attractive and so remunerative to its followers is that the whole system is built on therapeutics. The anatomy and the pathology that he studies is made subservient to his ultimate purpose, the cure of his patient; and surgeons never tire of listening to discussions as to the best method of operative procedure, even to the finest detail. Even the tying of a peculiar knot in a ligature has entertained an audience in the American Medical Association, and the essayist has received the applause and congratulations of his colleagues.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

Not so in internal medicine. Some of the leading lights in this branch of medicine say, with a measure of pride: "We know nothing of therapeutics and less of materia medica."

In some of the largest clinics in this country and in Europe the clinician, after an exhaustive study of the scientific aspect of his case, not only says little or nothing about those agents which might be brought to bear to cure the patient, but does nothing, and apparently waits, rather impatiently, for the postmortem to verify his opinions as to the pathology of the case.

He who aims to practice medicine for the good he may do or who hopes to build a practice by the results he achieves, finds little allurement in ante-mortem theorizing and postmortem verification. Our patients come to us to be cured, and when internal medicine shall make the means of cure its central figure and the purpose of the study of diagnosis and pathology, normal and pathological physiology, lead the way to therapeutics, then will the therapeutics of the materia medica interest the practitioner as does surgical therapeutics.

One of the noticeable things of to-day is the skepticism of the profession regarding drugs. The cause of this is, no doubt, the natural reaction from credulity. The young physician, and sometimes the older one, believes what some fellow physician or some traveling salesman says of the efficacy of particular drugs in particular diseases; and when disappointment overtakes him, as it surely must, he is prone to condemn drugs in toto.

How few physicians know the exact physiologic action of the drugs they use every day in their practice! How few take the same interest in functional disturbances that they do in organic lesions! It is as important to understand the physiological action of the agents employed in the cure of disease as it is to recognize the pathologic conditions, both functional and structural, in the patient. It is as essential to know the limitations of the agent as it is to know its potency.

A few years ago the wise men proclaimed that our materia medica would be relegated to the archives of ancient history in a very short time. The signal success of diphtheria antitoxin forecast in their minds an era when the hypodermatic syringe and the box of assorted serums would be the complete armamentarium of the future doctor. Time has not verified their predictions, nor has it added many successes along the line of serum therapeutics; but the investigations of these enthusiasts have given us a rational explanation for the use of many drugs. The knowledge that we now possess of cellular activity and the cause of disease should be a stimulus to a more scientific study of the remedial agents found in materia medica. Recognizing the fact that all doctors rely upon these remedial agents most of the time, and most of the doctors rely upon them all of the time, we must conclude that materia medica should have a very prominent place in the curriculum. The teacher should be an enthusiast in order to inspire the student. He should have that confidence in his subject that is gained by thorough knowledge and happy experience.

A famous jurist once said to his law student: "In your practice of law beware of the attorney with a small library, he has it in his head." In the teaching of materia medica I would suggest a small but carefully classified list of drugs that shall be thoroughly studied and demonstrated. The most eloquent man in the world could not teach diagnosis except in the presence of disease; neither can the most scientific teacher of materia medica bring his instruction to a successful issue without the presence and the demonstration of his drug. The chemical and physiologic laboratory must be brought into requisition, and these kindred branches must be so interwoven in study of materia medica that the student can not tell where one begins and the other leaves off.

The teaching of this subject should be by means of didactic lectures, laboratory demonstrations and quizzes. As I believe it would be inexpedient, if not impossible, for a medical student to learn all of the drugs in our materia medica, it should be the duty of the teacher to select those which he deems most important and so classify them in accordance with their physiologic action that the whole field of medical therapeutics would be covered.

I believe that the importance of this classification can not be overestimated; unclassified knowledge is of little use and is soon forgotten. The drugs in each class should be arranged according to their therapeutic value, rather than in alphabetic order, and the same distinctions should be made in teaching of their physiologic action as is made in the study of synonyms in rhetoric. In this way, by the use of a comparatively few drugs, the student has a sufficient knowledge of the essentials of materia medica, to which he may add innumerable remedies, and be able to make the finer distinctions. This would do away with text-books on the subject, and in their place we would have reference books, as the student would be trained in library practice, which would serve him a good purpose in future years.

Laboratory instruction should consist, not only in studying the physical and chemical properties of drugs, by which the memory would be assisted by an actual acquaintance with them, but it should be carried into the physiologic laboratory; and pharmaco-dynamics should be so demonstrated on the lower animals as to make a lasting impression on the mind of the student.

There should be at least two hours a week for one college year devoted to recitations upon this subject, beside the instruction already mentioned. If, in addition to this, the course in physiology could be so arranged that a reasonable portion of the time be devoted to function, with a view to possible derangement and cures, and the work be made to harmonize with that of pharmacodynamics, the student of materia medica would be so interested that this branch would be studied because of his love for it rather than because it is an essential to graduation.

The study of pharmacy, materia medica and therapeutics can not be separated, and they must not be crowded into any one portion of the college course. From the day he enters the college until he passes his final examination the subjects of the cure of disease by remedial agents found in materia medica should ever be kept before the student. In the first year he should be introduced to the subject through pharmacy and chemistry. In the second year he should be interested in it through the subjects of physiology and physiologic chemistry. In the third it, with therapeutics, should be made the basis of the preliminary study of medicine; and in the senior year materia medica in the form of the prescription should be made the cap-sheaf of his study in medicine.

Chewing Pitch Good for the Teeth.—A Swedish physician, who has made a study of the subject, finds that the chewing of Burgundy pitch, which is common in some sections of that country, has a marked effect in preserving the teeth.—*Popular Mechanics.*

THE PLACE AND IMPORTANCE IN THE COLLEGE CURRICULUM OF THERAPEUTICS.*

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In discussing this question it is important that we should arrive at a definite conclusion as to what is meant by the terms materia medica and therapeutics. Sometimes these terms are used interchangeably and sometimes materia medica is used to designate the study of the medicinal substances themselves; their derivation, active principles and pharmaceutic preparations. This, I believe, to be the more modern use of the term "materia medica," while therapeutics deals with the practical application of the drugs to the relief or cure of disease, and should, in my opinion, include the study of the *physiologic action, or pharmacology, of the remedies* under consideration. In expressing my views as to the best means by which students are to be taught these important subjects, I may perhaps be pardoned if, for the sake of brevity, I describe the course which I have arranged for the students attending the Jefferson Medical College, in which institution I have charge of the subjects under discussion. And it is needless to say that I believe this to be the proper way of teaching materia medica and therapeutics or I would not have it so carried out.

THE PLANS OF THE FRESHMAN YEAR.

In the first year the student has one recitation and me *lecture a week in which he is taught the derivation* f the more common drugs; their official names; the oses of the preparations commonly employed; the predominant symptoms of poisoning by the common poisons and the antidotes for the same, and in addition, for six weeks of the term, he receives instruction in the pharmacy laboratory, the class being divided into sections so as to allow of individual teaching. In this laboratory each student has the opportunity of handling crude drugs, and he also is taught how to prepare all of the official preparations of the United States Pharmacopeia. I do not mean by this that he prepares all of them, but that he prepares, under the direction of competent demonstrators, a syrup, a tincture, a fluid extract, etc., taking one individual preparation as a type of a class; this course being designed not only to familiarize him with the crude drug and official product, but also to give him a clear conception of the difference between the various *pharmaceutic* preparations and to give him information which will prevent him from writing prescriptions which contain chemical and pharmaceutic incompatibilities. At the end of this course he has a practical laboratory examination covering his work in the laboratory, the mark in which counts a certain number of points, and he also is examined on the ground covered by the lectures and recitations which he has had during the year.

THE SOPHOMORE AND JUNIOR YEARS.

During the second and third years the student attends the lectures on general therapeutics, and is examined at the end of the third year on this course. These lectures consist in a description of the physiologic action and therapeutic application of the various remedies. The study of the physiologic action of the drug is not carried on separately from its therapeutic effect, but the practical application of our knowledge of its physiologic action to the pathologic condition present is carefully discussed. In this way I believe that it is much easier for the student to gain knowledge, both as to physiologic action and therapeutic application, than when these two subjects are considered separately. At the end of the third year an examination is held on the course just named. During the third and fourth years the student attends twice a week a general medical clinic, in which I devote special attention to diagnosis and the practical application of therapeutics. This clinic is not only illustrated by a very large number of cases in clinical medicine but its interest is also largely increased by the use of a powerful stereopticon, by means of which prescriptions, showing how certain drugs can be advantageously combined in the treatment of a malady, are thrown upon the screen without the room being darkened. This lantern is also used for the purpose of throwing pictures on the screen which illustrate cases of a similar character which have been brought before the class in previous years, so that instead of one case the lantern often permits me to show as many as six cases in addition to the actual living subject which is present. This lantern also permits me to throw on the screen colored pictures showing pathologic changes and diagrams illustrating physical signs. These pathologic illustrations are often of value, not only for the purpose of impressing on the student how drugs may do good, but equally important for impressing upon his mind that in certain conditions drugs can be of no value whatever so far as the pathologic state is concerned. Thus, if the student is shown a *lung which has undergone croupous consolidation, it is* not difficult to impress on his mind that the employment of chlorid of ammonium as an expectorant under such circumstances is useless, since it can in no way influence the process of resolution. On the other hand, it impresses on the mind the fact that chlorid of ammonium may aid in expectoration in the later stages of resolution by aiding in the expulsion and relieving the congestion of an inflamed bronchial mucous membrane. In the teaching of therapeutics it is as important, in my mind, to teach the student when not to employ drugs as it is to teach him when to employ them. Too often a young graduate leaves his alma mater with the idea that properly applied remedies can cure everything. Under these circumstances he speedily meets with disappointment, and is often driven to the other extreme, in which he becomes a therapeutic unbeliever, when *in reality had he* been properly taught he would have become a rational *and safe therapeutist.*

THE SENIOR YEAR.

During the fourth year the senior student not only attends the clinic just mentioned, but also hears lectures *once every alternate week* on special therapeutics, including such subjects as hydrotherapy, electro-therapy, climatology, mineral springs, serum-therapy, etc. In the other week he attends a therapeutic conference in which he is quizzed on the treatment of real or supposititious cases and is required to write prescriptions on the blackboard embodying his therapeutic views, which prescriptions are then *criticised as to their construction and* therapeutics before the class.

This course is the result of some eighteen years' experience in the treatment of this subject, and I believe that it meets the needs of the student. As an illustration of what the course is intended to teach I may be permitted to quote two paragraphs which are found on the fly-leaf of the ninth edition of my text-book of "Practical Therapeutics":

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"When called to guide a patient through an illness, the physician should be constantly a watchman, and a therapeutist only when necessity arises."

"A good physician is one who, having pure drugs, knows when to use them, how to use them and, equally important, when not to use them."

DISCUSSION

ON PAPERS OF DRS. HILL AND HARE.

Dr. Lefevre, Cincinnati—I approve of the remarks of the first speaker, with regard to the relative neglect of therapeutics by medical schools in general and by the profession. I have been connected in a teaching capacity with this particular branch for a number of years. After several years I adopted a plan which was practically that outlined by the last speaker. In the first year I have the students devote their time to the study of the physical qualities and properties of drugs and their combinations, but nothing at all about the physiologic effects or therapeutic properties or applications. In the second year they are taught the physiologic action and in the latter half of the second year pharmacology is taken up, and a classification made of several types of drugs on a pharmacologic basis. Quizzes are carried on in connection with the lectures. In the third year instruction is conducted by didactic lectures, quizzes and demonstrations of the clinical action of drugs. Conferences are held, devoted to the consideration of remedies acting on the heart, or on the nervous system, or other special organs. Notice is given in advance so that the students come prepared for these discussions. In the lectures during this part of the course the general properties of the drugs and their applications to certain diseased conditions are reviewed, the different drugs being presented in the order of their relative value in the treatment of the condition under consideration. In the fourth year clinical conferences are given to the graduates. Certain cases are assigned for study and placed on the bulletin board, so that the students may prepare themselves to discuss these cases at the conference. Special instruction is given also in the fourth year, in electrotherapeutics, balneology, the effects of heat and cold and other non-pharmacologic topics, by special lectures and demonstrations. This whole course is so arranged and conducted that the student may gain practical knowledge of the subject, in addition to the usual theoretical knowledge.

I wish to allude to the uselessness of the questions asked by the medical examining boards. I have made a list of a number of such questions given by medical boards of various states to candidates for license to practice medicine. For instance: the uses of pumpkin seeds had been asked twenty times, and there were others equally useless, about minor drugs. It would seem that they chose the useless articles of the pharmacopeia rather than the main drugs and their therapeutic applications. With regard to the subject of classification of drugs, I agree with Dr. Hill, and I would follow the plan of grouping them according to their application to certain disturbed functions. This can only be done with a student who has a knowledge of the physiologic action of the drug. With advanced students such a classification is of much service in studying materia medica. With very few exceptions I have adopted the methods outlined by the preceding speakers with their classes, and I think if carried out further they will lead to more definite teaching and better knowledge of the subject.

Dr. A. W. Baer, Chicago—In the hospitals and dispensaries, the student goes through all the clinical rooms except one—the drug room. It is within the province of teachers to render great service to their students by pointing out to them the great benefit to be derived from spending at least part of their summer vacations in a pharmacy. Any young man, with the necessary acquaintance, can easily get a situation in one where he can learn more in three months, regarding the properties of drugs and their combinations, than he can learn in a medical college in two terms of four months each.

Dr. Frances Dickinson, Chicago—In the school with which I am connected it is the practice to postpone the teaching of the physiologic action of drugs until the third year. Such teaching requires special apparatus for demonstration, and few schools have the necessary equipment and facilities for teaching and demonstrating the action of drugs from the physiologic standpoint, or their physical effects. With such appliances the student can grasp the facts of the science better and they are more firmly impressed on his mind, when the methods of study used in the physiologic laboratory are followed, rather than by attempting to memorize the subject directly from books. With regard to the classification of drugs the arrangement according to their physiologic action has a scientific basis. It is advisable to make out a list of the drugs of special importance to be taught thoroughly in the curriculum, and then, just before the men go before the state boards, to give several evenings to a review of the drugs of minor importance so that they will be thoroughly prepared. The study of pathology is dead at present; it should be connected more closely and logically with the therapeutic use of drugs from chemical and physical action standpoints.

Dr. William J. Robinson, New York—There is one point which does not seem to have been sufficiently emphasized. We all recognize the importance of therapeutics, but we do not realize that our own neglect of it has led to the growth and development of sects and quackery, such as Eddyism and osteopathy. Very often men who are empiric are very successful in treating minor ailments, which are less successfully treated by the higher scientific practitioners. Some physicians who are well up in pathology may not be good practitioners; they are too apt to neglect, or consider as beneath their dignity, the trifling ailments of their patients, which other physicians of less scientific attainment treat successfully. If irregular physicians get their patients from us it is due to our own neglect of therapeutics of these minor ailments. I endorse the views of Dr. Hare as to the questionable usefulness of an attempt at classification of remedies. Take up a text-book that has such a classification and the failure is at once evident: acetic acid, for instance, is classed as a cardiac depressant, etc. Drugs can not be classified therapeutically without being subject to criticism; in fact, they might almost as well be arranged alphabetically for convenience of reference; of course, drugs very closely related, like the solanaceæ, or digitalis and strophanthus, should be classified together.

With regard to the character of the questions asked by medical state boards, I once asked an examiner why he asked questions about drugs that were of so little importance, who replied: "Of course, on the principal drugs the student would be well prepared and there would not be enough questions to go around. We would be obliged to ask the same questions over and over again, so we have to take the less known drugs for examination." This, at least, gives some explanation of their course in asking apparently useless questions. I approve the suggestion of the last speaker with regard to the value of actual experience in drug stores for medical students. It will not improve him as a diagnostician, but will make him a better prescriber; one less likely to combine incompatible chemicals, and it would acquaint him with drugs as they are used at present in the treatment of disease. A short apprenticeship of about three months behind the prescription counter would be sufficient.

Dr. Eli H. Long, Buffalo—It is a hopeful sign that those engaged in teaching the subjects of materia medica and therapeutics should meet and compare their methods. I agree in the main with Dr. Hill and think the course outlined by him admirable. It is one that I can endorse from my own experience. As regards the matter of small attention being paid to therapeutics, the remedy for this state of affairs lies in our own hands. The time is very rapidly approaching when the physician and the surgeon will recognize the usefulness of drugs to a far greater degree than they do at present.

In my own course, materia medica is taught in the second year as a laboratory subject; the students are seated at tables and given a limited number of the most important drugs for thorough study under the direction of the lecturer, their constituents, properties and general uses being learned in this way. The pharmacal laboratory course during the same semester includes experimental incompatibility. During the same year a recitation course introduces therapeutics and a course in experimental pharmacology familiarizes the student with the positive action of the important drugs. At the beginning of his third year the student knows a great deal of chemistry, anatomy and physiology and some pathology. He is in possession of facts from which he can draw practical deductions as to the use of remedies in practice. In aiding the student to do this, I do not teach by lecturing, but by conferences with the students. Assuming that they know their materia medica and physiology, I review with them the pathologic conditions present in disease, and help them to reason out the application of drugs to suit such conditions. The importance of teaching the student to think and reason out for himself can not be too highly estimated. He is thus taught to do before graduation what he would otherwise have to learn in his first years of practice. I am glad to know that prescription work is now emphasized. I teach practical prescription writing in the fourth year. The students write prescriptions for clinical and hypothetical cases, their work being then subject to criticism and discussion by the class.

Dr. Horatio C. Wood, Jr., Philadelphia—It is a point of considerable importance in teaching whether we attempt a classification or not. Because we can not classify drugs exactly scientifically, we should not therefore abandon it entirely. If we can not at once give a complete classification of remedies from a therapeutic standpoint, it is no reason for not trying to do so. If we do not make any attempt, it absolutely puts an end to progress. The classification used in botany to-day is different from that which prevailed a few years ago, and may undergo other changes. The classification of plants according to the color of their flowers would be just as scientific as the alphabetic arrangement of drugs. The man who adopts an alphabetic classification of remedies is not contributing to the advance in therapeutics. For illustration: we know that digitalis and strophanthus have a similar action on the heart, and it is of great assistance to the student if they are grouped together. If, on the contrary, he studied digitalis early in the year and several months later he came to strophanthus, in the alphabetical arrangement of drugs, he might not succeed in establishing their relation in his mind, and their resemblance might be overlooked. Classification of some kind is of great assistance to the student, and the therapeutic or physiologic method will aid him in keeping the common properties of remedies of the same group in his mind, and will enable him to retain them for his future needs in practice.

Dr. Henry Slack, Lagrange, Ga.—I agree thoroughly with Dr. Hill. About five years ago I made a tour through a number of medical schools to observe their method of teaching therapeutics, and from what I observed I came to the conclusion that the profession was drifting toward therapeutic nihilism or empiricism. Teaching has improved somewhat since, but it is not yet all it should be. One of the weakest points in teaching is the dispensary work. The student gets a large portion of his practical knowledge in the use of drugs from his experience in the dispensaries, where the method is to use stock preparations which are distinguished by numbers or letters. For instance, a physician came to New York from another state and prescribed a mixture under the title of "M. G. A." The pharmacist could not fill it and the physician had to search in his notes for nearly fifteen minutes to find out himself what the composition of "M. G. A." was.

Dr. Solomon Solis-Cohen, Philadelphia—I did not hear the papers, but they are on a subject on which I entertain very decided convictions. There can be no doubt that the reason why the patent medicine man has such success and why so many proprietary preparations are used is that the average medical student when he leaves college has not learned how to prescribe. He may go out with the idea that drugs are to be given according to some mysterious principle known only to his teacher, or as a therapeutic nihilist. To remedy this but one thing is necessary: it is to make the medical student think out the prescriptions in his college course and learn to write them intelligently before he gets his diploma. Let him frame a prescription for an actual patient in the presence of his teacher, who can show him where he is wrong and wherein he is right and explain the reason; he will then soon learn the correct principles of drug prescribing. Just as in any other problem, however, the condition must be stated and understood before the solution is possible. Anatomy, physiology, pathology, etiology and diagnosis, on the one hand, and chemistry, physics, materia medica and pharmacodynamics on the other hand must be known before therapeutics can be studied as the keystone of the medical arch. No matter how much a man may know of abstract science, the patient comes to the physician as to a "healer," and the latter's accurate knowledge of pathology would have very little value if he could not assist or relieve the sufferer. The sick man is not merely a unit in a column of statistics, but a living, sentient, human being and is so to be managed. I tell my students that the clinical diagnosis comes first, but it is not sufficient merely to call a morbid process by a name. One must also make the pathologic diagnosis; that is, to determine the special morbid changes that are going on in an individual patient at the time of examination and forecast their probable course. Then the etiologic diagnosis is to be made—the causation originally, and the causes now active or likely to become active are to be sought for. After this comes the therapeutic diagnosis: Can the causes be removed or overcome? What is the evolution of the disease and can it safely be left to itself, or do dangers threaten from which the patient should be guarded? If dangers threaten in the course of normal evolution, shall we interfere, and if we determine to interfere, for what purpose and in what direction shall the interference be made? Then, we have to decide by what means to interfere, considering not only the pharmaceutic agents at our command, but also the physical and psychic influences through the use of which we can best attain the definite object we have in view. Now, unless in previous teaching the remedies have been classified, the student knows not where to look in his mind for the name of the particular drug, or measure, or means, that will do what he has decided ought to be done. The kind of teaching that will bring him up to that point must come, so far as concerns materia medica, from teaching a few drugs exhaustively in connection with physiology and functional pathology, and others in subordination to the main examples. We must not, however, neglect similar teaching of physical measures or fail to take account of the mental processes. The time has come for the profession to take out of the hands of the quack these potent agents. Suggestion as well as the more tangible remedial measures has its legitimate use.

Dr. Hill, in closing—In regard to the classification of drugs from a physiologic standpoint, while I realize that a perfect classification in this way is impossible, still we may group the principal ones satisfactorily and the balance we may put under the head of alteratives. I have never taught a student with a view of his passing state boards or final examinations, but I believe a student who is well grounded need fear no examinations. A man who knows all about a few things and a little about all things is regarded as an educated man. The same rule is applicable to the study of drugs. A familiarity with all drugs is desirable, but a working knowledge of one or more principal drugs of each physiologic class is essential. Grouping the drugs of minor importance around the principal ones not only facilitates the memorizing of them, but also enables the student to make practical application of the knowledge he possesses. I believe the sophomore year is the place for pharmacodynamics, as the student is then studying physiology and pathology. If the curriculum can be so arranged that a portion of the time given to pathology be devoted to functional pathology and the work in this branch be made supplemental to physiology and pharmacodynamics, the student, when he reaches the junior year, will be ready to take up the application of drugs to disease. This work I do in a systematic way in the first semester of the junior year, the second semester being to class conferences in hypothetical cases. In the fourth year I treat applied therapeutics in the hospital clinics. Cases are given individual students who write complete histories and descriptions of existing pathologic condition (organic or functional). Treatment is outlined by him and prescriptions written, then the patient and history are brought before the class for discussion and criticism. In this work we aim to treat the existing conditions—or, as some one has said: "to treat the patient."

MENTAL THERAPEUTICS AND THE NEED OF PSYCHOLOGY IN THE MEDICAL CURRICULUM.*

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> Every illness is a factor simple or complex, which is multiplied by a second factor, invariably complex—the individual who is suffering from it. The doctor who does not read you to the bottom is ignorant of essentials. To me the ideal doctor would be a man endowed with profound knowledge of life and of the soul, intuitively divining any suffering of whatever kind, and restoring peace by his mere presence. Such a doctor is possible.—*Amiel's Journal.*

Physicians need no argument to show that purely physical processes may cause profound mental changes. Every case of lesion of the brain, every delirious fever patient, every exhilarated banqueter, furnishes a fresh illustration of the fact. The converse proposition, that purely mental processes may cause profound physical changes, still excites a tendency to doubt or wonder, but it is just as true and special instances are just as familiar. The blanched face, chattering teeth, shaking limbs and weak, irregular heart of a person who is merely frightened; the nausea, cold extremities, arrested digestion, prostration and loss of weight in a previously healthy person who has merely received bad news by telegram: the manifestation of muscular energy in response to an idea, which occurs in every voluntary action; all these are constantly recurring proofs which might be multiplied almost indefinitely.

Our modern knowledge of the brain goes far toward a satisfactory explanation of this mutual action of body on mind and mind on body. Every sensitive part of the body has its sensory area in the cerebral cortex; all the voluntary motions are represented in regular order in the motor keyboard of the Rolandic region. Changes in the body modify the sensory currents which are constantly streaming into the cortical centers and so modify sensations which are the raw material of all forms of consciousness. Every emotion, every thought causes nerve currents to pass from one group of cortical centers to another and ultimately to muscles, viscera and all other tissues. Every thought about an organ of which one is conscious excites the corresponding sensory and motor centers and through them modifies the function of the organ. Emotional disturbances cause a particularly energetic disturbance of the thoracic and abdominal viscera whether these organs are thought about or not.

These generalizations are familiar enough now, but they have not improved medical practice as such great physiologic truths ought to improve it. The majority of us treat patients as machines out of order, to be repaired by purely mechanical, physical or chemical remedies. Yet, with only insignificant exceptions, a physician must always make a strong mental impression on his patient. And if such impressions exert a physical action for good or ill comparable to that of powerful drugs or of electricity, then surely it is incumbent on us to make our knowledge of mental processes and their effects as accurate, full and systematic as possible. It is the object of this paper to give specific illustrations of the need of psychologic knowledge in the practice of medicine in general. Insanity will not be included, for, strange to say, the great problems of mental disease are physical rather than psychologic problems. Hypnotism will also be omitted from the discussion, as I do not regard it as an eligible therapeutic agency in any but exceedingly rare cases.

An Illustrative Case.—Some years ago a young Russian Jew came to Denver from one of the hospitals in Philadelphia, armed with a big box of creosote pills, which were to aid him in a desperate fight to escape death from consumption. Less than a year before, while in apparently robust health, he had fallen into the water and was almost drowned. A violent cough began the same day and grew steadily worse, often being accompanied by vomiting. After a time blood appeared in the sputum and hemoptysis became first a frequent and then an almost constant symptom. Latterly blood had appeared in the urine also. His weight had fallen from 205 to 155 pounds.

He appeared at the Dispensary of the University of Denver, coughing incessantly and panting for breath, so that it seemed impossible for him to talk; his handkerchief was constantly held to his mouth and was covered with blood stains. The students thought he might die at any moment.

But a thorough physical examination revealed nothing abnormal in the chest, so he was sent to me with the expectation that I would find a grave organic lesion of the central nervous system. I found right hemianesthesia, amblyopia of the right eye, complete loss of hearing, smell and taste on the right side, aphonia and some weakness of the right arm and leg, the whole combination being perfectly typical of hysteria. The history contained many points strongly indicative of an hysteric origin of all the symptoms. The blood on the handkerchief was genuine, but pale and thin, as though much diluted by saliva. The urine passed then was clear and contained no albumin.

The diagnosis of hysteria was made at the first interview and, in the presence of a number of students, a most impressive statement was made that the true nature of the disease had now been discovered and that he would be cured very quickly if he would only do exactly as he was told. His respiration was over sixty per minute and the first thing was to drill him into breathing slowly. Then, after some electrical applications, made solely for psychic effect, he was sent to his lodging with the positive assurance that slow breathing would entirely stop the coughing and spitting of blood and that he would sleep soundly that night. To insure fulfilment of the latter prediction, he was given ten grains of chloral to take on going to bed. Other drugs were purposely omitted.

The patient slept that night and returned next day in an exuberant state of happiness; the dyspnea and cough were practically gone, there was no blood in the saliva and the voice was much stronger. St. Luke's Hospital admitted him as a charity patient and on full feeding and continued encouragement he gained very rapidly in weight and strength. Some days after admission he insisted on going out to beg some money and on returning unsuccessful was tearful and apparently greatly depressed. The next morning the house physician observed that there was blood in the sputum and also in the urine. This disappeared during the day but was noted again the following morning. The specimen of urine furnished me each morning was of a clear crimson color, without sediment, contained albumin, responded to the guaiac test for blood and under the microscope showed many red blood cells. With the blood cells was a considerable number of squamous epithelial cells which I supposed to be from the bladder. Only here and there was a columnar epithelial cell observed. Blood did not appear again in either urine or saliva and the patient made very rapid progress, about 25 pounds being gained in a few weeks.

He then left my care, saying he must return to his family in Philadelphia. For some reason, probably to get a little money from me, he was lying, and instead of leaving Denver, went to work in a livery stable. Some days later, while currying a horse, he sank to the ground and was found to be paralyzed on the right side. Speech was retained and he cried a great deal. Two weeks after this the physician who had examined his chest happened to find him in a lodging house and told me of his condition, remarking that whatever else might be hysteric, this hemiplegia was organic. Some students hunted the man up and brought him to my office. I found the right arm and leg in rigid extension; the foot was dragged, not swung; the face and tongue were not involved; right hemianesthesia had returned; in short, the paralysis was clearly hysteric.

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* Read before the Colorado State Medical Society, June, 1902.

After some reproaches I promised to cure him again, at 11 o'clock the next day. The students saw to it that he kept his appointment and after some electrical stimulation of the affected muscles, followed by manipulation and exercise of each joint, used only to restore confidence, he used both the leg and arm very well, only a slight awkwardness remaining. I never saw him after this, but have no doubt that he relapsed before long.

This case is, of course, a very unusual one, but it is highly instructive on account of the prompt disappearance of such alarming symptoms under a treatment intentionally limited to mental impressions[†]. All cases of hysteria are like it in having mental perversions for their exciting cause and in being absolutely defiant of any treatment which does not, intentionally or accidentally, include the right mental effect. Cases of hysteria, moreover, are common in all branches of practice. They come to the practitioner of internal medicine disguised as grave gastric or intestinal disorders, as heart disease, as epilepsy, apoplexy or what not. To the surgeon they may appear disguised as an exquisitely painful inflammation of a joint, as a foreign body in the esophagus, as appendicitis or as a neuralgia perhaps so intense as to demand amputation for its relief. The gynecologist sees the symptoms of organic pelvic disease closely simulated by hysteria. The oculist sees hysteric amblyopia, spasm of the internal recti, often mistaken for insufficiency of the external recti, spasm of the orbicularis simulating ptosis, and so on. The laryngologist deals with hysteric aphonia, hysteric cough and hysteric laryngeal spasms. Even the dermatologist has his cases of pure hysteria.

But, vast as the field of hysteria is, it is by no means the only disease in which psychic methods are necessary. Many cases of neurasthenia, although they seem to be caused by exhausting physical influences, are in reality mainly due to a persistent depressing idea. Worrying about imaginary disease may be more harmful than the effects of the real disease. Many a man carries a mental burden for months or years because he has an occasional seminal emission or because he has discovered a little mucus at the meatus or the normal epididymis, or the veins of the spermatic cord, or that the left testicle hangs lower than the right. That a nervous woman's mind is often fixed upon her pelvic organs, to her great detriment, is well known to every physician. Similar false ideas in regard to syphilis, heart disease, tumors and the effect of injuries are far from being rare. A morbid idea of this kind constitutes a mental traumatism which is often the most important fact in the case, and no treatment can succeed unless it includes persistent systematic effort to eradicate the false notion and to replace the state of emotional depression by one of serenity and confidence.

Digestive derangements are of the greatest importance in general practice if only on account of their frequency. It must be admitted that great additions have been made to the knowledge of normal and pathologic digestion and much greater precision in diagnosis and treatment attained. Still the profession is very far from recognizing the full importance of mental factors in the etiology of functional digestive disorders. Excessive mental work, worry and depressing emotions are the primary causes of a very large proportion, perhaps of a majority, of the cases of disturbed digestion; yet these causes are commonly ignored and the remedy sought in pepsin or hydrochloric acid or a severe restriction of diet. These remedies, although suggested by conditions actually present, fail to remove the real cause, unless by accident, and they often do harm. In the course of evolution the whole process of digestion has become excessively sensitive to attention and especially to the idea that the food is in any way wrong. Close, anxious attention to one's diet is certain to impair digestion whether the foods selected be in themselves good or bad. The physician must, of course, have due regard to the chemistry of digestion and restrict the diet in certain cases, but he must also understand the relation of digestion to the functions of the nervous system; in short, he must know the whole man.

Much might be said of the psychic factors in the formation and correction of bad habits. See, for instance, what is accomplished in the "Keeley cure" simply by following each indulgence in whisky with a hypodermic of apomorphia, the patient supposing it to be his usual tonic. Intense nausea and vomiting thus become associated with the mere thought of taking a drink and powerfully reinforce the desire to abstain.

In nervous patients we frequently find an emotional condition which causes over-contraction of the voluntary muscles and embarrassed, rapid respiration. This is an important source of distress and exhaustion and must be obviated by teaching the patient not to attempt to hold the nervousness in, but to relax the muscles and to breathe freely and slowly. Bodily relaxation and easy breathing strongly favor mental serenity; indeed, they are quite incompatible with intense emotion, and on this account they will infallibly prevent any form of hysteric paroxysm if the patient can only be induced to put them into practice in the incipient stage of the attack.

In treating any class of diseases in which there is a hysteric or neurasthenic element the physician is often embarrassed by the patient's statement that the medicine disagrees, although it has been carefully chosen and proportioned to the needs of the individual case. In the great majority of such instances the supposed disagreement is due solely to suggestion. The patient is liable to bad sensations and at some previous time has felt badly when taking a drug similar in some respect to the one now prescribed. Consequently any disagreeable feeling, whether evoked by expectant attention or occurring accidentally, is attributed to the new prescription and the physician is greeted with something like this: "Doctor, I had to stop taking that medicine; it nearly killed me. I ought to have told you that I never could take strychnia," etc. This is often a critical point in the management of the case. If the doctor innocently changes the prescription he will probably have to change again and again until the patient has a long row of boxes or bottles, each nearly full, on which he gazes, regretting the money he has spent for them and meditating upon the doctor's strange failure to understand his case. Instead of changing let the physician explain that the prescription is exactly right, that the apparent disagreement was due to suggestion and that persistence in the right course will bring success. But, as an essential corollary to this proposition, let the prescription for a new patient be a perfectly safe one and sufficient to last only a short time, so that it will all have been used when a change is desirable. The ease with which the physician, as well as the patient, may form a fallacious estimate of the good or bad qualities of drugs is apparent.

[†] For a discussion of hysterical hemoptysis and hematuria, see Gilles de la Tourette, Traité de l'Hystérie, vol. iii, p. 221 et seq., and p. 380; also Loewenfeld, Neurasthenie and Hysterie, p. 418 and p. 445.

In infectious diseases, in organic affections in general and in surgical cases, the patient's mental processes count for comparatively little so far as recovery is concerned, yet even here they are of considerable importance. One of the ablest surgeons I have known had the same effect on many of his patients as on the students at examination time; they dreaded his visits and were in a state akin to stage fright as he made his daily rounds. It is not difficult to believe that certain patients, barely able, under the most favorable circumstances, to recover from an operation might have the scale turned the wrong way by this adverse influence. This particular man had great talents and acquisitions to make him successful. To one of merely average attainments his manner would have been an insurmountable barrier to success. And, on the other hand, we all know physicians of less than average knowledge and skill who nevertheless succeed admirably in acquiring and holding practice because they have the knack of impressing favorably a large class of patients.

But I do not wish to push the argument too far. It would be a grave mistake to rely mainly on mental influences in the great majority of medical cases. This is the mistake made by the Eddyites, often with tragic results. The proposition I wish to lay down is that in some very important cases the mental influence exerted by the physician is the only treatment that will succeed or is required, while in others it is an essential part of the treatment and in all is well worth taking into account as affecting both the patient's welfare and the physician's personal success.

It is no injustice to our profession to say that as a whole it has not studied the human mind sufficiently to meet the indications of everyday practice. The study of the body and the fight against the physical, chemical and parasitic causes of disease has been so engrossing that ignorance of the mind and the part it plays in disease could, perhaps, for the time being, be excused. But this ignorance will no longer be winked at. Agents so powerful for good or evil as suggestion and emotion can not be abandoned to fanatics and charlatans, nor will it be sufficient for an honorable profession to use them empirically. They must be skilfully employed on scientific principles for the good of the patient, not to deceive but to undeceive, not to make him wonder in weak-minded credulity but to strengthen him in rational self-reliance and bring him into a state of stable mental equilibrium.

To this end medical schools will in the future teach psychology as a fundamental part of the curriculum, just as they now teach physiology. This psychology will not be metaphysical, but a scientific description with, as far as possible, an explanation of normal and morbid mental processes and their bodily consequences. Sensation, perception, memory, association, emotions, will, hysteria, hypnotism, etc., must be studied in the light of all that is known of the structure and functions of the brain with clinical illustrations of the practical application of the knowledge gained to medicine.

Convinced of the importance of this subject, I have, during the past year, given to the medical students of the University of Denver a course of lectures on psychology in its relation to the practice of medicine, and the trustees have made it an essential part of the course. I believe that at present our school is a pioneer in giving systematic, although very elementary instruction in this field, but I predict that in a few years all schools will furnish more elaborate courses of the same kind.

Evolution of the Army Medical Department.—In his presidential address before the Association of Military Surgeons of the United States, Lieut.-Col. John Van R. Hoff discussed "The Broader Mission of Our Association." In the course of the address he said: "To-day the attention of our legislators is being directed toward the nationalizing of our state forces. Are the medical departments of these ready to assimilate? Have they reached the standard set for them by our honored founder in his memorable address? Some of our state guards have medical departments that leave little to be desired, but how many? I find by references to the latest returns that the organized militia numbers 115,749, of which 902 pertains to the medical department, including hospital and ambulance corps, about 0.8 per cent., less than one-half of what it should be for the most advanced line of assistance, leaving entirely out of consideration everything from there back to the base hospital, all of which would require not less than six times the total number of men now in the medical departments of the state forces. Are the medical departments of all states organized on identical lines? Are their medical officers members of a distinct corps? Or do they in some states yet linger, superfluous appendages to the regimental commander, to be made or broken at his whim? And as to equipment—is that uniform? Instruction—is that the same? Requisitions, reports, returns, regulations—do they correspond? Turning to the regular establishments, the association here also has a mission. It must demand of their personnel, both commissioned and enlisted, the highest degree of efficiency; it must see that their organization and equipment are as perfect, if not more perfect, than those of any other nation; it must provide a means, through our medical schools, for the dissemination of a knowledge of military sanitation in the profession at large, so that every physician will know something of the work of the medical officer. One of its most important duties is that a public medical school is established in which shall be educated those who are to become members of the three public medical services. Such a school should be organized in this city in connection with a great military hospital. To it should be nominated medical cadets exactly as are cadets to West Point or Annapolis. Here the enlisted force for the Hospital Corps should receive preliminary training for their important duties. In connection with the hospital should be a training school for women nurses for duty at fixed hospitals, and here special courses could be arranged for medical officers of the national guard. What a wonderful influence for good would such an institution develop! And last, but not least, the association must formulate plans by which private aid may be made to supplement, not supersede, the public service in time of war or other stress. But beyond these things, important as they are, the association offers to the military humanitarians of the world an opportunity to meet on common ground and co-operate in formulating methods for the mitigation of what must always be 'the horrors of war.' We see the beginning of this to-day in the presence of distinguished representatives of the medical department of foreign armies, gathered from all quarters of the globe, and may we not hope that through them and their successors the good influences of this association will be extended to the uttermost parts of the earth? Originated by civil practitioners to improve the efficiency of the medical department of the state forces, year by year the association has broadened its lines until it embraces in its membership not only the medical officers—past and present—of the national guard and volunteers, but of the army, the navy and marine-hospital service as well. Our doors are now opened to the medical officers of the armies of all nations."

MEDICAL SCHOOLS IN THE UNITED STATES.

Below is given a brief description of every college in the United States that is legally chartered to confer the degree of doctor of medicine and whose diploma is recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The order in which the colleges are placed is according to date of organization, grouped in cities. The information given is, as a rule, obtained from the catalogs and has been submitted to the dean of each school for his inspection and approval. Colleges which belong to the Southern Medical College Association or the Association of American Medical Colleges have requirements for admission of students according to the rules of these Associations, unless their requirements are higher, in which case a statement is made to that effect. Extracts from these rules are given at the close of the list of colleges.

ALABAMA.

Alabama, population 1,828,697, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College.

Mobile.

MEDICAL COLLEGE OF ALABAMA.—This is the Medical Department of the University of Alabama, and was organized in 1859. It is located in Mobile, a city of 38,469 inhabitants. The City Hospital furnishes free clinical material. The faculty consists of 9 professors and 17 lecturers, 26 in all. It is well equipped with buildings, laboratories, dispensary, etc. It is a member of the Southern Medical College Association. The course of study is graded and covers four years of six months each. The total fees for each of the first three years is $100; for the fourth year, $125. Board and lodging, $3.50 to $5 per week. The Dean is Dr. George E. Ketchum, Mobile, Ala. Total registration, 1901-1902, 136; number of graduates, 13. The thirty-seventh session will begin Oct. 7, 1902, and will close April, 1903.

Birmingham.

BIRMINGHAM MEDICAL COLLEGE.—This school was incorporated in 1894 and is situated in Birmingham, a manufacturing town of 38,415. The clinical advantages are good. The Hillman, St. Vincent's, Pratt and County hospitals are accessible to the students. The clinical, histological and pathological laboratories are well equipped. There are 12 professors and 8 lecturers; total, 20. The school is a member of the Southern Medical College Association. The course of instruction is a graded one and embraces four separate sessions of six months each. The fees are $75 for each of the first three years and $105 for the fourth. Good board can be obtained at from $12 to $20 per month. The Dean is Dr. B. L. Wyman, Birmingham. Number of students registered last session, 82; number of graduates, 8. Next session opens Oct. 1, 1902, and closes April 1, 1903.

ARKANSAS.

Arkansas, population 1,311,564, has one medical college.

Little Rock.

MEDICAL DEPARTMENT OF THE ARKANSAS UNIVERSITY.—This college is located at Little Rock, population 54,587. It was organized twenty-three years ago as the Arkansas Industrial University Medical Department. It is a charter member of the Association of American Medical Colleges. Hospital facilities are furnished by Logan H. Roots Memorial Hospital, St. Vincent's Infirmary and Pulaski County Hospital, the latter having a capacity of 200 beds. The teaching body consists of 23 besides assistants, Dr. F. L. French, Little Rock, being Secretary of the faculty. The fees are: Matriculation $5, paid but once; annual fees $60, and graduation $25. Board and lodging costs from $13 to $18 per month. Total number of students at last session, 220; graduates, 11. The next course of lectures begins Oct. 20, 1902, and ends April 11, 1903.

CALIFORNIA.

California, population 1,485,053, has eight medical colleges. Six are located in San Francisco, a city of 342,782 inhabitants. They are Cooper Medical College, Medical Department of the University of California, California Medical College, Hahnemann Medical College of the Pacific, West Coast Medical College, and the College of Physicians and Surgeons. The clinical facilities of San Francisco are good; board and lodging can be obtained for from $20 to $30 a month. The College of Medicine of the University of Southern California is situated in Los Angeles, population 102,479. Board and lodging can be obtained in that city for $4 a week and upwards. The Oakland College of Medicine and Surgery is in Oakland, a suburb of San Francisco.

San Francisco.

COOPER MEDICAL COLLEGE.—This school was organized in 1858, though its present name was not adopted until 1882. The faculty consists of 11 professors and 20 lecturers and demonstrators, 35 in all. Lane Hospital, adjoining the college; the City and County Hospital, containing 464 beds, and the college dispensary furnish clinical material. The requirements for admission are a certificate showing that applicant has passed the regular examination for admission to Stanford University or University of California, or other university having an equivalent standard, graduation from an accredited high school or academy, or graduation from California State Normal School. The college building supplies large laboratory and lecture-room facilities. The curriculum covers a graded course of four years of eight months each. Fees: First year, $115; second, $110; third, $100, and $125 for the fourth year. The Dean is Dr. Henry Gibbons, Jr., 920 Polk St., San Francisco. Total registration for 1901-2 was 214; graduates, 25. The present session opened Aug. 15, 1902, and will close April 28, 1903.

MEDICAL DEPARTMENT UNIVERSITY OF CALIFORNIA.—This department of the State University was organized in 1872, and has a faculty composed of 17 professors, 6 associates and lecturers, 41 instructors and assistants, a total of 64. The City and County Hospital, which admits students of this school not only to the clinics proper, but also to its wards for study, and the college dispensary furnish good clinical material. The senior class is divided into sections of six students each and bedside instruction is given them five days a week. Practical laboratory examinations are required of the students in the laboratories of the hospital, and practical obstetric demonstrations are given at the bedside. The building is commodious and furnishes good laboratory and lecture-room space. The course covers graded work for four years of eight months each. This school is a member of the Association of American Medical Colleges. The total fees for the first year are $115; second, $110; third, $100, and $125 for the four year. The Dean is Dr. Arnold A. D'Ancona, San Francisco. Total registration for 1901-2 was 151; graduates, 24. The thirtieth session opened Aug. 18, 1902, and will close May 18, 1903.

CALIFORNIA MEDICAL COLLEGE.—Eclectic. This school was organized in 1878. Its faculty includes 14 professors, 8 lecturers and 6 instructors, a total of 28. The clinical material is supplied by the Buena Vista and City and County hospitals. Applicants for admission not holding diploma or certificate are examined. The course has been extended to cover four years of eight months each. Total fees are about $110 for each of the first three years and $40 for the fourth year. The Dean is Dr. D. Maclean. Total registration for 1901-2 was 84; graduates, 6. The next session opens Oct. 6, 1902, and closes June 17, 1903.

HAHNEMANN MEDICAL COLLEGE OF THE PACIFIC.—Homeopathic. This was organized in 1884, and has a faculty of 17 professors, and 21 lecturers, instructors, etc., in all 38. The Pacific Homeopathic Polyclinic, the Homeopathic Sanatorium and the San Francisco Nursery for Homeless Children and Marie Kip Orphanage, accommodating, respectively, 45, 75 and 120 beds; Fabiola Hospital, and the City and County Hospital, furnish a clinical material for study. Matriculants must possess a knowledge of English composition, arithmetic, geography, history and Latin, as evidenced by certificate or examination. One year after entrance is permitted in which the student may prepare himself in Latin. The course includes four years of seven months each. Total fees for the first year, $150, and $100 for each of the other three years. The Dean is Dr. James W. Ward, 606 Sutter St. Total registration for 1901-2 was 45; graduates, 8. The twentieth session opened March 6, 1902, and will close Oct. 31, 1902.

COLLEGE OF PHYSICIANS AND SURGEONS OF SAN FRANCISCO.—This school was organized in 1896 and has a faculty of 24 professors and 26 associate professors and teachers. The hospital facilities consist of the City and County Hospital, where the college has 3 wards available for bedside instruction; the California General Hospital with 50 beds, owned and controlled by the college trustees, and St. Winifred Hospital with 50 beds, where clinical instruction is given in abdominal surgery and gynecology. The daily clinics at the new college building furnish abundant material of every description. Applicants for matriculation must show an equal amount of work done or pass a satisfactory examination in English, history and government, geography, physics, mathematics and Latin, grammar and translation. The college building recently completed is well supplied with laboratories and lecture rooms. This college now conducts a continuous course of medical instruction. Each year is divided into four quarters of three months each, and known as the autumn, winter, spring and summer quarters. Students may enter at the beginning of any quarter. Attendance on 12 quarters will be required and at least 45 months must elapse between the beginning of the first course and the time of graduation. Fees, $30 per quarter. The Dean is Dr. D. A. Hodghead, 1025 Sutter street. Registration for 1901 was 180, of these 41 graduated in medicine. The autumn quarter opened Sept. 2, 1902, and closes May, 1903.

WEST COAST MEDICAL COLLEGE.—This school is the successor of the Pacific Coast Regular College of Medicine. The Dean, Dr. C. W. W. von Tiedemann, 818 Howard St., writes that the enrolment for 1901-2 was 122, the course is five years, the degree of A.B. is required for entrance.

Oakland.

OAKLAND COLLEGE OF MEDICINE AND SURGERY.—This new school will open this fall. The Registrar is Dr. R. T. Stratton. The faculty numbers 21. Tuition is about $115 yearly. The session opens Sept. 15, 1902, and ends May 16, 1903.

Los Angeles.

College of Medicine, University of Southern California.—This school was organized in 1885, and has a faculty of 27 professors and 7 instructors, etc., 34 in all. The County Hospital, having 200 beds, and a college dispensary furnish clinical material. Applicants for admission are required to pass an examination in English, arithmetic, elementary algebra, physics and Latin equal to one year's work, unless they can show by certificate that they have covered that ground. The building is amply provided with laboratories and lecture rooms. A graded course, covering four years of thirty-two weeks each, is offered. The total fees for the first year are $145; second and third, $130 each, and $40 for the fourth year. The Dean is Dr. James H. McBride, Potomac Block, Los Angeles. Total registration for 1901-2 was 102; graduates, 14. The next session opens October 16, 1902, and closes June 10, 1903.

COLORADO.

Colorado, with a population of 539,700, has three medical colleges. Two of these are in Denver, which has a population of 133,859: Denver—Gross Medical College and Denver Homeopathic College; the other, the Colorado School of Medicine, is at Boulder (population 6150). The clinical facilities in Denver available to the two colleges are the Arapahoe County Hospital, which has a capacity of 225 beds; St. Joseph's Hospital, with 200 beds, and St. Luke's Hospital, with 75 beds. The Public Library contains 10,000 volumes on medicine. Board can be obtained in Denver for $5 a week and upward.

Denver.

The Denver and Gross College of Medicine.—This is the Medical Department of the University of Denver, and was organized this year by the union of the Gross Medical College (organized 1887) and the Denver College of Medicine (organized 1880). The clinical advantages are the college dispensary, the Arapahoe County Hospital, St. Luke's Hospital, St. Anthony's Hospital, St. Joseph's Hospital, National Jewish Hospital for Consumptives, Home for Dependent Children and the City Contagious Hospital and Mercy Sanitarium. The faculty is made up of 39 professors, 11 clinical and associate professors and 41 instructors, and other assistants, a total of 91. Its location is central and the buildings are well arranged for laboratory, dispensary and didactic work. The course is graded and covers four years of eight months. The college is a member of the Association of American Medical Colleges. Final examinations at the end of each year are held. Fees for the first year are $115. For the second year $116. Third year $101. Fourth year $126. Total registration 1901-2: Denver College of Medicine, 60; Gross Medical College, 73. Graduates Denver College of Medicine, 11; Gross Medical College, 24. The twenty-second session will begin Sept. 16, 1902, and close May 16, 1903. The Dean is Dr. G. Bonney.

Denver Homeopathic College.—This college, organized in 1894, besides the Arapahoe County Hospital, has exclusive privileges for clinical work in the Denver Homeopathic Hospital, the Haven and the Belle Lenox Nursery. The faculty numbers 23 professors and 9 lecturers and instructors, 32 in all. The requirements for admission are, "possession of a diploma from a literary college, university, an academy, a normal or high school; a first grade teacher's certificate, or a previous matriculation at some reputable literary or medical college." The course of study consists of four years of seven months each; monthly examinations are held in each subject. A five-year scholarship may be had for $300, payable in advance, otherwise the tuition is $100 a year; there is a matriculation fee of $5, payable once. The Dean is Dr. James P. Willard, Masonic Temple, Denver. Total registration for 1901-2 was 34; the number of graduates, 10. The ninth session begins Sept. 17, 1902, and will close April, 1903.

Boulder.

Colorado School of Medicine.—This is the Medical Department of the University of Colorado, and was opened in 1883. The University Hospital, under the control of the state, is equipped to accommodate 40 patients and furnishes free clinical material. Both hospital and dispensary clinics are offered and the sanatorium located in Boulder offers additional advantages in this line. The faculty embraces 15 professors and 10 lecturers and assistants, a total of 25. The laboratories are well equipped and commodious. A separate building is devoted to the study of anatomy and another one is used for medical work exclusively. A complete four-year course of study in a recognized high school, or its equivalent, is required for admission. This school is a member of the Association of American Medical Colleges. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. Luman M. Giffin, Boulder. Total registration for 1901-2 was 63; graduates, 13. Twenty-first session begins Sept. 8, 1902, and closes June, 1903.

CONNECTICUT.

Connecticut has a population of 908,420, and contains one medical college.

New Haven.

Yale Medical School.—This is the Department of Medicine of Yale University, and is located in New Haven, a good railroad and manufacturing city of 115,000 people. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. In 1879 a new charter changed the name to the one now used, and in 1884 the Connecticut Medical Society, which from the granting of the first charter had taken an active part in its control, released itself from a further responsibility and the University authorities assumed full control. The clinical advantages are embraced under the New Haven Hospital, which contains 150 beds and is the general hospital for New Haven; the Springside Hospital, which is connected with the city almshouse, and the State Hospital for the Insane, which, with its 1800 patients, offers an opportunity for special instruction in insanity in addition to the clinics. Besides these, the University has just completed a $100,000 building for the dispensary service which offers good material for clinical teaching. The faculty embraces 13 professors, 5 lecturers, 12 instructors, and 22 assistants, a total of 51. The lecture rooms and laboratories are large and well equipped. Matriculants are admitted without examination, provided that they have received a degree in arts or sciences, that they present certificates showing that they have successfully prosecuted the subjects of the examination at some college, high school, academy, or preparatory school approved by the faculty, or that they have passed matriculation examinations equivalent to those required, at some approved professional school. This school is a member of the Association of American Medical Colleges. The course covers a four-year graded curriculum, eight months constituting a school year; the first two years the fundamental branches are studied, the third year is devoted to a systematic teaching of medicine, surgery, obstetrics and pharmacology, and in the fourth year clinical work, with medicine, surgery and the specialties, is presented. The fees are $150 each year: in the first year there are additional fees amounting to $18, and in the second, $8, and there is a graduation fee of $10. Board and lodging in New Haven can be obtained for $4.50 and upwards. The Dean is Dr. Herbert E. Smith, New Haven. During the session of 1901-2 there were 145 matriculants and 20 graduates. The eighty-ninth session opens Oct. 2, 1902, and closes June 24, 1903.

DISTRICT OF COLUMBIA.

Washington, population 278,718, offers to the student of medicine many advantages. The Army Medical Museum, the Museum of Hygiene, the National Museum, the library in the Surgeon-General's office, the Toner Medical Library and Museum of Hygiene, in all over 125,000 volumes on medicine, open to the medical student a most profitable field. The clinical advantages offered by the various hospitals are good. Owing to the many boarding houses and hotels, board and lodging can be had at extremely reasonable rates. The medical schools are four and are as follows:

Washington.

Medical School of Columbian University.—This school was organized in 1821 as the Medical Department of Columbian College, which in 1873 became Columbian University. Besides University Hospital, under the immediate control of the faculty and giving the students of this school exclusive clinical advantages, the Garfield Hospital, the Children's Hospital, Central Dispensary and Emergency Hospital, the Providence Hospital, the Lutheran Eye and Ear Infirmary, the Episcopal, Columbia and the St. Elizabeth's hospitals, all permit of abundant opportunity for clinics and clinical material. The faculty is composed of 29 professors, and 23 demonstrators and assistants, 52 in all. This school is a member of the Association of American Medical Colleges. The equipment and facilities for laboratory, didactic and clinical work are good. The completion of graded work covering the period of four years, eight months to the school year, is required; semi-annual examinations are held. Total fees for each year are $110. The Dean is Dr. E. A. de Schweinitz, 1325 H. St., N. W., Washington. New and enlarged buildings for both college and hospital will be completed by the opening of the next term. For the school year 1901-2 the total registration was 257; the graduates were 26. The eighty-first session begins Oct. 1, 1902, and closes June 1, 1903.

Georgetown University School of Medicine.—This school, organized in 1850, controls the Georgetown University Hospital, which affords excellent facilities for clinical teaching and ward classes. Clinics are also held for the benefit of the students in Providence Hospital, containing 300 beds; in the Children's Hospital, the Central Dispensary, Emergency Hospital and the Garfield Hospital. Attendance on clinical instruction is obligatory in the third and fourth years. The faculty contains 28 professors, 27 instructors and assistants, total 55. This school is a member of the Association of American Medical Colleges. The building is conveniently located and contains spacious and well-ventilated lecture rooms, laboratories and library; the laboratories are equipped with the most approved instruments and appliances. The complete course of study extends over four terms of eight months each. Examinations are held at the end of each session. The fees for the first, second and third years are $105 each, and for the last year, $100; a fee is charged for the material used in practical anatomy and operative surgery. The Dean is Dr. George M. Kober, 1600 T St. The total registration for the session 1901-2 was 130; graduates, 13. The next term opens Sept. 29, 1902, and ends May 31, 1903.

Howard University Medical Department.—This institution was organized in 1867 and "in conformity with the spirit of the organic law of the University, is open to all, without regard to sex or race, who are qualified by good moral character, proper age and suitable education." The removal of any racial distinction has been taken advantage of by colored students, who compose a majority of those in attendance, but a number of white students are also receiving instruction. The Freedmen's Hospital and Asylum is a general hospital of 300 beds. The faculty comprises 15 professors, and 10 lecturers and assistants, 25 in all. This college is a member of the Association of American Medical Colleges. Students are required to attend four courses of lectures in separate years of seven months each. The fees of each session are $80, plus $2 per part for dissecting material. Board can be had at the school dining hall for $9 a month, and a room in the dormitory for $15 a term. The Dean is Dr. Robert Reyburn, 714 13th St. N. W., Washington. Total registration for the year 1901-2 was 145; graduates, 27. The thirty-fifth session begins Oct. 1, 1902, and closes May, 1903.

National University Medical Department.—This school, organized in 1884, is a member of the Association of American Medical Colleges, and has a faculty of 37. Clinical facilities are obtained at the Providence, Garfield and Episcopal hospitals, the Eastern and Presbyterian dispensaries and the Home for Incurables. Instruction is given by lectures, recitations, clinical teaching and practical laboratory work. Oral examinations are held each week and final examinations, *both oral and written, at the* end of each lecture term. The course consists of graded work for four years of eight months each. The total fees for each year are $100, except the first, when an additional fee of $5 is charged. The Dean is Dr. H. H. Barker, 1116 H St. N. W. Total registration for 1901-2 was 37; graduates, 9. The nineteenth session will begin Oct. 6, 1902, and will extend to May 31, 1903.

GEORGIA.

Georgia, population 2,216,331, has three medical colleges: Medical College of Georgia, located in Augusta (population, 39,441); Atlanta College of Physicians and Surgeons and Georgia College of Eclectic Medicine and Surgery, both in *Atlanta (a manufacturing* city of 89,872 population).

Augusta.

Medical College of Georgia.—This school was organized as a medical academy in 1829, and in 1873 *was made the Medical Department* of the University of Georgia. Its faculty includes 15 professors and 5 assistants, 20 in all. All students who entered on their first course after Sept. 30, 1900, must attend four sessions of six months each. Applicants for admission must, by examination, certificate or diploma, show that they possess an education equal to that required for second grade teachers in public schools; if they are deficient on examination, however, they are admitted *and they may remove the* condition any time before they appear for graduation. The City Hospital, with 130 beds; Lamar Hospital, with 80; the Polyclinic and the Hospital for Contagious Diseases supply clinical material. Total fees for first two years are $100 each; third year, $90, and $120 for the last year. Board and lodging can be procured for from $3 to $5 a week. The Dean is Dr. Eugene Foster, Augusta. Total enrolment for 1901-2 was 121; graduates., 47. The seventy-first session opens Oct. 1, 1902, and closes April, 1903.

Atlanta.

Atlanta College of Physicians and Surgeons.—This school was formed in 1898 by the consolidation of the Atlanta Medical College, organized in 1854, with the Southern Medical College, organized in 1879. It has a faculty of 14 professors and an adjunct faculty of 14, a total of 28. Clinical facilities are furnished by the Grady Hospital, which is the general hospital for Atlanta; clinics are free to the graduating class. First course students are required to "give satisfactory evidence to the faculty of such educational qualifications as will be deemed necessary for the successful prosecution of their medical studies. These requirements will be similar to those of other reputable medical colleges in the country." *The course of* study covers four years of six months each and is graded. The buildings are large and a new building for practical anatomy has just been added. Fees: First and second years, $75 each; third and fourth, $100 each. Board and room can be obtained for from $3 to $4 per week. The Dean is Dr. W. S. Kendrick, 71 Washington St., Atlanta. Total registration of students for 1901-2 was 257; graduates, 111. Next session begins Oct. 1, 1902, and closes April 4, 1903.

Georgia College of Eclectic Medicine and Surgery.—This was organized in 1886, and has a faculty of 11 professors and 1 demonstrator. The college dispensary and Grady Hospital furnish clinical material. Applicants for admission must adhere to the requirements established by the National Confederation of Eclectic Colleges, of which this college is a member. The curriculum covers four years of six months each. The Proctor is W. M. Durham, M.D., 77½ Peachtree St., Atlanta. Total number of students for 1901-2 was 58; graduates, 21. The next session opens Oct. 1, 1902, and closes April 1, 1903.

ILLINOIS.

Illinois, population 4,821,550, has fifteen medical colleges. They are all located in Chicago, a city with 1,698,575 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, Chicago Homeopathic Medical College, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Harvey Medical College, Illinois Medical College, Dunham Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University and Chicago Eclectic College. Room and board can be obtained for from $2.50 a week upwards.

Chicago.

Rush Medical College.—This school was founded in 1837, organized in 1843, was the Medical Department of Lake Forest University from 1887 to 1898, and in the latter year became affiliated with the University of Chicago. The faculty is composed of 26 professors, 31 associate and assistant professors, and 137 instructors, assistants, etc., a total of 194. Good clinical facilities are furnished by Cook County Hospital, caring for about 20,000 patients yearly; Presbyterian Hospital, with 250 beds; a college dispensary, and an obstetric department. In addition to these, extramural clinical courses are offered at the West Side Hebrew Dispensary, St. Luke's Hospital, St. Anthony's Hospital, The Alexian Brothers' Hospital, Illinois Charitable Eye and Ear Infirmary and Chicago Isolation Hospital. Bedside instruction is given. The requirements for admission are those of admission to the better universities or colleges and, in addition thereto, one year of college work. For the sessions of 1903 there will be required a certificate of admission to the second academic year of an accredited university, and for 1904-5 to the third year. By the addition of a recently completed seven-story building, the facilities for clinical instructions are largely increased. The laboratories and their equipment are unexcelled. The curriculum covers graded work for four years of three quarters each, a quarter being *three months*. A continuous session is held, but credit for more than three quarters can not be obtained in any calendar year. A combined course for six years confers degrees of both science and medicine. All freshmen and sophomore studies are given at the University of Chicago. The total regular fees are $165 this year, but it is designed to *gradually increase the* fees to $200 per year. However, students in *continuous attendance*, i. e., three quarters in twelve months, may complete their course by paying the fees in vogue when they first enter the college. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Deans are Dr. Frank Billings, 100 State St., and Dr. John M. Dodson, 34 Washington St., Chicago. Total registration 1901-2 was 803; graduates, 211. The fiscal year begins July 1; final examinations are held at the end of each quarter for those who have completed their work.

Northwestern University Medical School.—This school was organized in 1859 as the Medical Department of Lind University, became independent as the Chicago Medical College in 1864, and in 1869 assumed its present relation as Medical Department of Northwestern University. The faculty comprises 33 professors, 6 associates and assistants, and 54 instructors, demonstrators, etc., in all, 93. The newly completed Wesley Hospital, with 225 beds; Mercy Hospital, containing 400 beds; Provident Hospital, having 100 beds, and a college free dispensary furnish opportunities for clinical study to students of this college exclusively. St. Luke's, *Cook County, and the Chicago Lying-in* hospitals are also open to them for study. Applicants for admission must, by diploma, certificate or examination, show possession of the educational acquirements required to enter the College of Liberal Arts of Northwestern University. This school is a member of the Association of *American Medical Colleges. The laboratory* and lecture-room facilities are ample and the equipment is good. The course of study covers graded work for four years of thirty-six weeks each. Final examinations are held at the end of each semester. The fees for each year are $135 and a matriculation fee of $5, paid once, is charged. *The Dean is Dr. N. S. Davis, Jr.*, 65 Randolph St., Chicago. The total registration for 1901-2 was 465; graduates, 96 The next session opens Oct. 7, 1902, and closes June 18, 1903.

Hahnemann Medical College.—Homeopathic. This was organized in 1851, and has a faculty of 52. Hahnemann Hospital and *a college dispensary supply clinical* material. The requirements for admission are sufficient knowledge of English, arithmetic, geography, algebra, physics, United States history and Latin. The course is four years of seven months each. Fees: Matriculation, paid once, $5; each term, $50, and hospital tickets, $5 each for *third and fourth years*. The Dean is Dr. E. Stillman Bailey, Marshall Field Bldg. Total registration, 1901-2, was 185; graduates, 47. The next session begins Oct. 1, 1902, and ends May 7, 1903.

Bennett College of Eclectic Medicine and Surgery.—This school, organized in 1868, has a faculty of 26 professors and 13 assistants, 39 in *all*. The Bennett, Cook County and Baptist hospitals and a college dispensary supply clinical facilities. Matriculants must present a diploma or certificate or pass a satisfactory examination "in conformity with the minimum requirements of the State Board of Health." The course covers four *years of twenty-six* weeks each. This school is *a member of the* National Confederation of Eclectic Medical Colleges. Fees for each year are $100, with a matriculation fee, paid once, of $5. The Dean is Dr. A. L. Clark, Elgin, Ill. Total registration, 1901-2, was 104; graduates, 21. The thirty-fifth session begins Sept. 23, 1902, *and ends May* 13, 1903.

Chicago Homeopathic Medical College.—This was organized in 1876, and has a faculty of 19 professors and 49 adjuncts, lecturers, etc., a total of 68. The Chicago Homeopathic and Cook County hospitals, together with a college dispensary, furnish clinical *material.* Applicants for admission must show by certificate from high school, or its equivalent, a sufficient knowledge of English, arithmetic, algebra, physics, United States history, geography, botany, and Latin equivalent to a year's study. The course covers four years of seven and one-half months each. Total fees are about $110 for each year. The Dean is Dr. W. M. Stearns, Marshall Field Bldg. Total registration, 1901-2, was 130; graduates, 35. The next session opens Sept. 16, 1902, and ends April 28, 1903.

College of Physicians and Surgeons.—This school was organized in 1882 and in 1896 became the Medical Department of the University of Illinois. *The faculty* is composed *of 39 professors*, 38 adjuncts and clinical professors and 38 instructors, etc., a total of 115. The West Side Hospital, containing 125 beds; Cook County Hospital, and a college dispensary and maternity clinic supply most of the clinical material, but under certain conditions students of this school are admitted to the following hospitals for clinical study: Augustana Baptist, Chicago, Woman's, Samaritan, Alexian Brothers', St. Mary's, and the Chicago Lying-in. This school is a member of the Association of American Medical Colleges. A magnificent building has recently been added to the college, and the laboratory, amphitheater and lecture-room space and equipment are excellent. The collegiate year is divided into two terms: the winter term of thirty-two weeks and the summer term of twelve weeks, of actual teaching. Attendance on the winter term is required in order to secure credit for a year's work, and attendance on four winter terms is required for graduation, except for students who are admitted to advanced standing. Attendance on the summer term is optional, and the work is supplementary to the work of the winter term. Students may obtain credit for work done in certain branches, but attendance on this term does not apply on the required thirty-two months' attendance necessary for graduation. The fees are $130 each for the first two years, $115 for the third and $125 for the fourth year. The Dean is Dr. William E. Quine, 103 State St. Total registration for 1901-2 was 692; graduates, 220. The fall term begins Oct. 1, 1902.

Hering Medical College.—Homeopathic. This school was organized in 1892. The faculty comprises 25 professors and 14 associates, lecturers, etc., in all 39. Hering College Hospital, National Temperance and Cook County hospitals supply clinical facilities. The course covers four years of seven months each. The total fees for a full course are $300 if paid in advance, or $100 per year. The Dean is Dr. H. C. Allen, 5142 Washington Ave. Total registration for 1901-2, was 72; graduates, 13. The eleventh session begins Sept. 9, 1902, and ends April 11, 1903.

Jenner Medical College —This is a day and evening school organized in 1892 The faculty consists of 28 professors and 7 assistants 35 in all Cook County Hospital and college dispensary supply clinical material, and the new Union Stock Yards Hospital will soon add to the facilities for clinical work This college belongs to the Association of American Medical Colleges The course covers four years of 44 weeks each and embraces laboratory didactic and clinical instruction The total fees each year are $100 with a $5 matriculation fee paid but once The Secretary is Dr A Loewy 196 Washington St Total enrolment for 1901 2 was 105, graduates 18 The present session began Sept 2 1902, and will end June 30 1903

Harvey Medical College —This is a night school, organized in the Chicago Atheneum in 1891 and reorganized in 1894 The lecture and laboratory work is all in the evening between the hours of 7 and 10, six days of the week and forty weeks of the year The clinical work hospital, dispensary, in practice and out practice are between the hours of 10 a m and 10 p m Attendance on 100 clinical hours yearly before 7 in the evening is obligatory besides attendance by the seniors on night obstetric cases and Saturday evening clinic at Cook County Hospital The faculty is composed of 42 professors 21 instructors and assistants, total, 63 The course covers four years of ten months each The requirements for admission are those of the Association of American Medical Colleges The total fees for first three years are about $125 each, and for the fourth year $150 The Dean is Dr Francis Dickinson Total registration for 1901 2 was 307 graduates 28 The twelfth session began Sept 2, 1902 and ends June 27, 1903

Illinois Medical College —This school organized in 1894, has a faculty of 24 professors and 19 assistants a total of 43 A college dispensary and Cook County Hospital are available for clinical study The requirements for admission are based on those of the Association of American Medical Colleges and include a high school diploma or its equivalent The college is a member of the Association of American Medical Colleges A continuous course consisting of four terms to the calendar year is offered, two terms of three months each constituting a college year Four collegiate years are necessary for graduation and forty two months must elapse between that time and matriculation Total fees are about $75 for each year The Dean is Dr B B Eads 103 State St Total registration for 1901 2 was 228 graduates 21 The next fall term begins Oct 1 1902

Dunham Medical College —Homeopathic This was organized in 1895 and has a faculty of 31 professors and lecturers Cook County Hospital St Anthony s Hospital and a college dispensary supply the clinical facilities Four years' work of seven months each is required for graduation The fees are about $100 for each year The Dean is Dr James E Kent, 92 State St Total registration for 1901 2 was 82 graduates 19 The twelfth session begins Sept 23 1902 and ends April 28, 1903

American Medical Missionary College —This school was organized in 1895 and has the primal object of educating men and women as missionary physicians The faculty numbers 25 The didactics and laboratory work covering the first two years is carried on at Battle Creek Mich and the clinical studies in Chicago A hospital with 20 beds in connection with the college, together with a free college dispensary, with an obstetric department, supply material for practical work The requirements are based on those of the Association of American Medical Colleges The course covers four years of nine months each Total fees are $125 for each of the four years The Secretary is Dr E L Eggleston, Battle Creek Mich Total registration for 1901 2 was 92; graduates 24 The eighth session opens Sept 24, 1902, and closes June 23 1903

College of Medicine and Surgery —Physio Medical This school was organized in 1896 and has a faculty of 31 teachers A college dispensary supplies material for clinical work The course covers four years of seven months each Fees for the first year $100, for the second and third, $95 each, and $110 for the fourth The Dean is Dr H P Nelson 631 Jackson Blvd Total registration for 1901 2 was 40 graduates 9 The next session begins Sept 26 1902 and ends April 27, 1903

National Medical University —This was organized in 1891, and its courses include instruction in the methods of all the so called schools of practice The faculty numbers 54 The requirements for entrance are a high school diploma or examination in accordance with the requirements of the Illinois State Board of Health A 4 year course of 6 months each has been required, but 9 months are now necessary in each year, and after 1902, 5 years of 9 months each will be necessary for graduation the fifth year being spent in the hospital Each year is divided into 4 quarters of 13 weeks each The fees are $100 per year or $300 for the four if paid in advance The Registrar is Dr L D Rogers, 533 Wells St Total matriculants for 1901 2 were 150, graduates, 11 The autumn quarter will begin October 1

American College of Medicine and Surgery —Eclectic This school was founded in 1901 and has now purchased the buildings of the Northwestern University Woman's Medical School which passed out of being this year It has a faculty of 50 The requirements for entrance are in accord with the rules of the State Board of Health The course is four years of eight months each American and Cook County hospitals supply clinical material The Secretary is Dr J D Robertson 103 State St The enrolment 1901 2 was 36 The next session begins Oct 1, 1902, and closes May 15, 1903

INDIANA

Indiana, population 2,516,462, has five medical colleges Four are situated in Indianapolis, a city of 169,164 people. The Physio Medical College, Central Medical College of Indiana, Central College of Physicians and Surgeons, and the Eclectic Medical College The clinical facilities of Indianapolis are good and board and lodging can be obtained from $2 50 a week upwards The Fort Wayne College of Medicine is situated in Fort Wayne, a railroad and manufacturing town of 45,115 inhabitants Board and room can be obtained there at an average of $3 a week

Indianapolis.

Physio Medical College —This school was organized in 1873, and has a faculty of 29 The course is four years of 26 weeks each Total fees for each year are $70 The Secretary is Dr C T Bedford, Indianapolis Total enrolment 1901 2, was 31, graduates 4 The next session begins Oct 7, 1902, and closes April 7, 1903

Medical College of Indiana —This is the Medical Department of the University of Indianapolis and was organized in 1869 The faculty embraces 25 professors and 39 adjuncts lecturers etc, total of 64 The City Hospital containing 200 beds, Indianapolis Dispensary, Central Hospital for the Insane with a capacity for 1800 patients, St Vincent s and the Maternity hospitals and a college dispensary provide clinical facilities the wards in the charity hospitals are open to students of this college for bedside instruction The laboratory and lecture room space is ample This college is a member of the Association of American Medica Colleges The course extends over four years of seven months each Fees first and second years, $80 each, third, $75, and $100 for the fourth year, which includes
is Dr Henry Jameson, Newton Claypool
enrolment for 1901 2 was 311, gradua
session opens Sept 23, 1902 and closes April 23, 1903

Central College of Physicians and Surgeons —This school was organized in 1879 and reorganized in 1901, at which time its faculty was greatly enlarged now numbering 23 professors, 50 lecturers and demonstrators total 73 A new college building has been erected on the most up to-date plans Its floor space comprises 25 000 square feet more than half of which is devoted to laboratory teaching The school gives instruction largely by laboratory and clinical methods Clinical facilities are furnished by a dispensary maintained by the college by the City Dispensary, City Hospital, St Vincent's Infirmary and the Central Hospital for the Insane This college was a charter member of the Association of American Medical Colleges The course is four years of 6 months each The Dean is Dr Allison Maxwell The fees are $75 for each year of the four years' course The session for 1902 3 will open Oct 2, 1902 Total registration 1901 2 was 70, graduates, 8

Eclectic Medical College —This school was organized in 1889 It has a teaching force of 31 The requirements for admission are those of the National Confederation of Eclectic Medical Colleges The catalogue shows a four year course of six months each Fees For each year, $75 or for all four $225, $25 for graduation Total registration, 1901 2, 25 The next session begins Sept 23, 1902, and ends April 11, 1903 The Dean is Dr R T Laycock, 909 Bates St

Fort Wayne.

Fort Wayne College of Medicine —This school was organized in 1879, has a faculty of 25 professors and 8 lecturers and assistants a total of 33 St Joseph s Hospital with a capacity of 250 patients, Hope Hospital, with 200 beds St Roche s Hospital having accommodation for 35 patients Indiana School for Feeble-Minded Youth and Allen County Orphan Asylum, capable of holding 150 children, supply the clinical facilities This school is a member of the Association of American Medical Colleges The curriculum covers four years of seven months each The course is practical, supplemented by lectures and laboratory work The total fees for each year are $75, with an additional $5 matriculation fee payable once The Dean is Dr C B Stemen 25 Broadway Total number of students registered 1901 2 was 46, graduates 9 The present session opens September 10, 1902 and closes April 21, 1903

IOWA.

Iowa, population 2,231,853, contains five medical colleges They are College of Medicine of the State University of Iowa, College of Homeopathic Medicine of the State University of Iowa, Iowa College of Physicians and Surgeons, Sioux City College of Medicine, and Keokuk Medical College, College of Physicians and Surgeons

Iowa City.

College of Medicine of the State University of Iowa —This is situated in Iowa City, population 7987, and was organized as the Medical Department of the State University in 1870 The faculty is made up of 14 professors 7 lecturers and 17 demonstrators and assistants, a total of 38 The University Hospital, built in 1897 at a cost of $50 000, supplies abundant clinical material The school is a member of the Association of American Medical Colleges The course of study covers four years of thirty six weeks each, embracing graded laboratory, didactic and clinical work Combined courses leading to more than one degree are offered Total fees for each year are $65 Board and lodging costs from $2 50 to $5 per week The Dean is Dr James R Guthrie Dubuque Total number of students registered for 1901 2 was 248, graduates, 40 The thirty third course of lectures opens Sept 24 1902, and will end June 17 1903

College of Homeopathic Medicine of the State University of Iowa —This was organized in 1877 The faculty is composed of 10 professors, and 9 lecturers and assistants, a total of 19, but some of these are of the faculty of the College of Medicine The requirements for admission and the work, with the exception of that pertaining to homeopathy, are the same as those for the other department The fees are also the same The Dean is Dr George Royal, Des Moines Total registration for 1901 2 was 59, graduates, 7 The twenty sixth session begins in September, 1902, and will end in June, 1903

Des Moines.

The Iowa College of Physicians and Surgeons —This is the Medical Department of Drake University and is located in Des Moines population 62 139 It was organized in 1882 The faculty contains 17 professors and 6 assistants, a total of 23. Mercy and Methodist hospitals furnish clinical material and attendance on clinics is required the same as on lectures. The requirements for admission are those determined by the Association of American Medical Colleges and the Iowa State Board of Medical Examiners. Instruction is given by means of lectures, recitations, demonstrations, laboratory work and hospital clinics. The work covers a graded course of four years of nine months each. Board and lodging can be obtained for $15 a month. The total fees for the first two years are $80 each, and for the last two years, $75 each. The Dean is Dr. Lewis Schooler, Des Moines. The total registration for the year 1901-2 was 64; graduates, 10. The twenty-first session began Sept. 5, 1902, and will end June 13, 1903.

Sioux City.

Sioux City College of Medicine.—This is located in Sioux City, population 33,111, and was organized in 1891. The faculty numbers 15. Clinical material is supplied by St. Joseph's, Mercy and Samaritan hospitals and a college dispensary. This college is a member of the Association of American Medical Colleges. The system of study embraces a four-year graded course, eight months being a school year. Final examinations are held at the close of each course of instruction. Matriculation fee, paid but once, $5; tuition, each year, $48; hospital fee, $5, and graduating fee, $20. The Dean is Dr. H. A. Wheeler. Total number of students registered, 1901-2, was 63; graduates, 10. The thirteenth session opens Sept. 10, 1902, and will close April 20, 1903.

Keokuk.

Keokuk Medical College, College of Physicians and Surgeons.—In 1849 the College of Physicians and Surgeons, Keokuk, was organized and four years later it became the Medical Department of the Universitv of Iowa, continuing as such until 1870, when the original name was resumed. By the union, in 1899, of this college with the Keokuk Medical College, organized in 1890, the present school under the above name was founded. Situated in Keokuk, a town of 14,641 people, and drawing much from the surrounding country, the clinical material is good. St. Joseph's Hospital is open to the student for study and the clinics held there are large and varied. The faculty is composed of 17 professors and 1 demonstrator, 18 in all. This college is a member of the Association of American Medical Colleges. The studies embrace a graded course of four years of seven months each. Board and room can be secured for from $2 to $4 per week. The total fees for the first year are $63; for the second and third, $58 each, and $53 for the last year. The Secretary is Dr. Oliver D. Walker, Keokuk. Total registration for 1901-2 was 247; graduates, 52. The next session begins Sept. 23, 1902, and ends April 28, 1903.

KANSAS.

Kansas, population 1,470,495, has two medical colleges, as follows: Kansas Medical College in Topeka (population 33,608), and the College of Physicians and Surgeons, situated in Kansas City (population 55,000).

Topeka.

Kansas Medical College.—This college, organized in 1890, has a faculty of 27 professors and 6 lecturers and assistants, 33 in all. Good material for both medical and surgical clinics is found in Christ's Hospital, with 100 beds, and Topeka State Hospital; the dispensary, in the down town district, also supplies material for class demonstration. The college is a member of the Association of American Medical Colleges. The college building affords ample laboratory and lecture-room space. The course of study is a graded one covering four years of twenty-six weeks each. Individual instruction is especially aimed at. The total fees for the first two years are $70 each, and $65 each for the last two years. The cost of board and room varies from $2.50 to $4 a week. The Dean is Dr. John E. Minney, Topeka. The total registration for 1901-2 was 99. The thirteenth session begins Sept. 16, 1902, and will close March 27, 1903.

Kansas City.

College of Physicians and Surgeons.—This was organized in 1894 as the Medical Department of Kansas City University. The faculty is made up of 29 professors, 3 lecturers and 5 demonstrators and assistants, a total of 37. Bethany Hospital, with 60 beds; St. Margaret's Hospital, a college dispensary, and an outside obstetric department supply clinical material. Practical demonstration and bedside teaching is emphasized in the work. The requirements for admission are in accordance with the rules of the Association of American Medical Colleges. The course of study is a graded one of four years, seven months each. A scholarship is offered for $175, but taken separately the total fees for the first three years are $60 each, and for the fourth year $50; matriculation fee, $5, payable but once. The Dean is Dr. J. W. May. The total registration of students for 1901-2 was 73; graduates, 27. The ninth session opened Sept. 2, 1902, and will close March 25, 1903.

KENTUCKY.

Kentucky, population 2,147,174, has eight medical colleges. They are all situated in Louisville, a growing city of 204,731 inhabitants, and are as follows: : University of Louisville Medical Department, Kentucky School of Medicine and Hospital, Louisville Medical College, Hospital College of Medicine, Southwestern Homeopathic Medical College, Kentucky University Medical Department, Louisville National Medical College, and Medical Department of State University. Board and lodging can be obtained in Louisville from $2.50 to $4 per week.

Louisville.

University of Louisville Medical Department.—This school was organized in 1837, under the name, Louisville Medical Institute, and in 1846 assumed its present title. It has a faculty of 11 professors, 26 lecturers, demonstrators, etc., a total of 37. The University Hospital, City Hospital, St. Mary's and St. Elizabeth's hospitals, together with the college dispensary, furnish good clinical material. This school is a member of the Association of American Medical Colleges. The course covers graded work for four years of six months each. Total fees: First year, $107; second, $122; third, $105, and fourth, $117. The Dean is Dr. J. M. Bodine, Louisville. Total registration for 1901-2 was 180; graduates, 31. The sixty-sixth session begins Sept. 29, 1902, and ends July 1, 1903.

Kentucky School of Medicine.—This school was organized in 1850, and has a faculty composed of 12 professors, 10 lecturers and 16 instructors and assistants, a total of 38. The College Hospital, City Hospital and the college dispensary furnish the facilities for clinical study. The student is brought directly into contact with the patient through dispensary and bedside work by dividing the classes into sections. This college is a member of the Association of American Medical Colleges. The laboratories and their equipment are good. The curriculum embraces a four years' course of six and a half months each. The fees for the first two years are $110 each; for the third year, $90, and $80 for the fourth year. The Dean is Dr. W. H. Wathen, 658 Fourth Ave. Total number of students registered for 1901-2 was 295; graduates, 45. The next session begins Jan. 2, 1903, and will end July 1, 1903.

Louisville Medical College.—This school was organized in 1869 and has a faculry of 10 professors and 13 instructors and assistants, 23 in all. The City Hospital, College Infirmary and a dispensary offer good clinical facilities. Applicants for admission must show by diploma, certificate or examination that they are sufficiently proficient in English, arithmetic, algebra, physics and such Latin as would be acquired in one year's study. The laboratories and lecture rooms are ample. The course of study covers four years of six months each. The total fees for each year are $100. The Dean is Dr. C. W. Kelly. Total registration of students for 1901-2 was 219; graduates, 29. The next session opens Sept. 15, 1902, and closes March, 1903.

Hospital College of Medicine.—This school is the medical department of Central University of Kentucky and was organized in 1873. The faculty is composed of 9 professors, 9 adjuncts and 23 lecturers, demonstrators, etc., a total of 41. The Gray Street Infirmary, City Hospital and a well-equipped college dispensary present good facilities for clinical study. The requirements for admission are those of the Association of American Medical Colleges. Laboratory work, which is a prominent feature of the course, is thorough and practical. The laboratories and amphitheaters are ample in equipment and capacity, and the hospital advantages give opportunity for personal bedside instruction. The course covers four years of six months each. Total fees for each of first two years, $120; for the third year, $85, and $125 for the fourth year. The Dean is Dr. P. Richard Taylor. Total enrolment for 1901-2 was 407; graduates, 65. The twenty-ninth session opens Jan. 1, 1903, and closes July 1, 1903.

Southwestern Homeopathic Medical College.—This college was organized in 1892 and has a faculty of 18 professors and 13 lecturers and assistants, 31 in all. A college dispensary supplies clinical material. The curriculum covers four years of seven months each. Total fees: First and second years, $85; third, $75, and $70 for the fourth. The Dean is Dr. A. L. Monroe. Total number of students for 1901-2 was 27: graduates, 4. Next session opens Sept. 30, 1902, and closes April 28, 1903.

Kentucky University Medical Department.—This school was organized in 1898. The faculty is composed of 14 professors, 19 lecturers, demonstrators, etc., 33 in all. Broadway Infirmary, the City Hospital, and a college dispensary furnish clinical material. The school is a member of the Association of American Medical Colleges. The buildings provide ample facilities for clinical, laboratory and didactic instruction. The course of study embraces graded work for four years of at least twenty-six weeks each. Total fees: First year, $110; second, $120; third, $90; and $120 for the fourth year. The Dean is Dr. Thomas C. Evans, 419 W. Chestnut St. Total number of students registered in 1901-2 was 238; graduates, 18. The next session opens Jan. 2, 1903, and closes July 2, 1903.

Medical Department of State University.—This is a school for colored students organized in 1899. The faculty numbers 12. Instruction is given at night. The course is four years, of six months each. Total matriculants for 1901-2 were 16. The Dean is Dr. W. T. Merchant.

Louisville National Medical College.—Colored. This was chartered in 1888 and shows a teaching force of 15. There is a four-year course, seven months to the year: the total fees are about $50 for each year. The Dean is Dr. W. A. Burney. The next session opens Oct. 14, 1902. Graduates, 1902, numbered 7.

LOUISIANA.

Louisiana, having a population of 1,381,625, contains two medical colleges: Medical Department of the Tulane University of Louisiana and New Orleans University. They are both situated in New Orleans, a city of 287,104 people. The cost of room and board is from $10 to $22 a month.

New Orleans.

Medical Department of the Tulane University of Louisiana. This school was organized in 1834 as the Medical College of Louisiana, and became by law in 1847 the Medical Department of the University of Louisiana, and in 1884 the Medical Department of the Tulane University of Louisiana. The faculty and all other instructors number 40. By acts of legislature the Charity Hospital, with its 900 beds, has been opened to the students of this school for clinical study not only in medicine and surgery, but also in obstetrics and gynecology. In the year 1901 there were 8368 cases treated in the wards of this hospital; these were indoor patients, and, in addition, 21,164 outdoor patients were treated in the free dispensary department. The Milliken Memorial Hospital, with a capacity for 200 children, is also available for study of clinical cases. Bedside instruction is given by the attending physicians to these hospitals, and postmortem examinations are held before the students. The requirements for admission to this college are those of the Southern Medical College Association. The laboratories are large and well equipped, and the lecture and recitation rooms are ample. The course of study covers four years of six months each. Total fees for the first two years are $135 each, and for the third and fourth, $145 and $165, respectively. The Dean is Dr. Stanford E. Chaille, New Orleans. The total number of students registered for 1901-2 was 361; graduates, 53. The sixty-seventh session begins Oct. 23, 1902, and will close April 29, 1903.

Flint Medical College of New Orleans University.—Colored. This school was organized in 1889. The faculty is made up of 8 professors, 3 lecturers and 3 instructors, 14 in all. Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic. This college is a member of the Association of American Medical Colleges. The curriculum covers a graded course of four years, twenty-six weeks each. T[illegible]ecture rooms are ample. Examinations are hel[illegible]s for the first year are $34; for the second, [illegible] and $40 for the last year. The Dean is [illegible] New Orleans. Total enrolment for 1901-2 was 47; graduates, 4. The thirteenth college year began Sept. 3, 1902, and will end March 6, 1903.

MAINE.

Maine, population 694,466, has one medical college:

Portland.

Medical School of Maine.—This is the Medical Department of Bowdoin College. It was organized in 1820. It has 13 professors and 5 instructors, total 18. Students of the first and second years are instructed in Brunswick, a town with 6800 inhabitants. The third and fourth year classes are taught in Portland, a city of 50,000 inhabitants and where are situated the Maine General Hospital and other clinical advantages. Applicants for admission, unless they possess a diploma, are examined in English, arithmetic, algebra, geometry, United States history, physics, chemistry and Latin. The course covers four years of twenty-six weeks each. The total fees are $120 for the first year; for the second and third, $110, and $130 for the fourth year. Board and lodging cost from $3 to $5 a week. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1902, 90; graduates 4, under the former three-year requirement; no fourth-year graduates until 1903. The next session opens Dec. 25, 1902, and closes June 25, 1903.

MARYLAND.

Maryland, with a population of 1,188,044, contains eight medical colleges. They are all located in Baltimore, a city with 508,957 inhabitants, and they are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Woman's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School and Maryland Medical College. The Bay View Hospital, having a capacity for 2000 patients, is open to students for clinical instruction, and furnishes good opportunities for practical demonstrations. Board and lodging can be obtained for from $3 to $5 per week.

Baltimore.

School of Medicine of the University of Maryland.—This institution was organized in 1807 as the College of Medicine of Maryland, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland. The faculty is composed of 14 professors, 21 clinical and associate professors, and 24 lecturers, demonstrators, etc., a total of 59. The University Hospital, a part of which is used for a hospital for foreign seamen and another portion for a free city hospital, offers excellent clinical facilities. Besides this, the Presbyterian Eye, Ear and Throat Charity Hospital, in which 10,734 patients were treated in 1900; the Hospital for the Relief of Crippled and Deformed Children, containing 40 beds; the Maternity Hospital, and a college dispensary furnish material for clinical study. This school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are ample and well equipped. The fourth-year class, divided into sections, receives special training in practical laboratory work in a well-appointed clinical laboratory. Didactic, laboratory and clinical instructions, special attention being paid to bedside work, make up the system of teaching. The course covers four years of seven months each, and is graded. The total fees for the first two years are $120 each; for the third year, $110, and $140 for the final year. The Dean is Dr. R. Dorsey Coale, Baltimore. The total number of students registered in 1901-2 was 366; graduates, 76. The ninety-sixth session begins Oct. 1, 1902, and will terminate May 15, 1903.

College of Physicians and Surgeons, Baltimore.—This school was organized in 1872, and in 1878 Washington University School of Medicine, established in 1827, was consolidated with it. The faculty numbers 50. The clinical facilities, besides those afforded in common with other schools, are supplied by the Baltimore City Hospital, the Hospital for the Colored Race, containing 100 beds; the Nursery and Child's Hospital, with 150 beds; the Maryland Lying-in Asylum, and a college dispensary. This school is a member of the Association of American Medical Colleges. The work covers a graded course of four years, seven months constituting a year. Total fees for the first three years are $115 each, and $135 for the last year. The Dean is Dr. Thomas Opie. The total number of students registered in 1901-2 was 305; graduates, 58. The next session opens Sept. 30, 1902, and closes April 16, 1903.

Baltimore Medical College.—This college was organized in 1881, and has a faculty of 52. The clinical material is furnished by the Maryland General Hospital, having a capacity of 200 beds; the Maryland Lying-in Hospital, the Mount Hope Retreat, which presents good opportunity for the study of nervous and mental diseases, and a college dispensary, which, besides the great number of ambulatory patients treated, has an outdoor department that permits of the advanced student taking care of charity cases and carrying out his own treatment. This college belongs to the Association of American Medical Colleges. The college buildings afford ample laboratory, clinical and lecture-room space. Bedside teaching in the hospital wards is carried on in sections and every member of the senior class is required to attend throughout the session. The course of study is graded and covers four years of seven months each. The Dean is Dr. David Streett. The total number of students registered in 1901-2 was 532; graduates, 93. The twenty-second session opens Sept. 25, 1902, and closes about April 27, 1903.

Woman's Medical College.—This school was organized in 1882 and has a faculty of 14 professors, 4 adjunct professors, and 9 assistants and lecturers, a total of 27. The Hospital of the Woman's Medical College, St. Mary's Asylum and a college dispensary furnish clinical material. The college is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are equipped with all necessary apparatus; the practical work is emphasized. Eight months constitute a school year, and the course covers graded work for four years. The total fees for the first three years are $105 each, and $85 for the last year. Total number registered for 1901-2 was 25; graduates, 4. The twenty-first session opens Oct. 1, 1902, and closes May 29, 1903.

Baltimore University School of Medicine.—This school, organized in 1884, has a faculty of 12 professors and 11 lecturers, demonstrators, etc., in all 28. The Baltimore University Hospital, Lying-in Hospital and the clinical material used in common with the other schools, supply the facilities for practical work. This college is a member of the Association of American Medical Colleges. The college dispensary affords much clinical material and the students, under the direction of the physician in charge, make calls and treat patients at their homes. The lecture rooms and laboratories are ample, and the course of instruction, which consists of graded work for four years of six months each, is practical. The total fees for the first two years are $100 each; for the third year, $80, and $110 for the fourth year. The Dean is Dr. Hampson H. Biedler, 119 W. Saratoga St. Total registration for year 1901-2 was 63; graduates, 31. The nineteenth session opens Oct. 1, 1902, and closes April 15, 1903.

Southern Homeopathic Medical College.—This school was organized in 1890, and has a faculty of 11 professors, 4 associate professors, and 19 lecturers and demonstrators, a total of 34. The clinical facilities are those offered by the Maryland Homeopathic Hospital, which has 55 beds, and the dispensary; the obstetric department also furnishes clinical material. Applicants for matriculation must pass a satisfactory examination in English, arithmetic, geography, history, and Latin, unless they possess satisfactory evidence that they have done a corresponding amount of work. The course covers graded work for four years, seven months to the year. The fees are $105 for the first year, $100 each for the second and third, and $130 for the last year; $350 in advance for the full four years' course. The Dean is Dr. George T. Shower, 421 Roland Ave. Total registration 1901-2 was 35; graduates, 9. The twelfth session begins Oct. 6, 1902, and ends May 2, 1903.

Johns Hopkins Medical School.—This is the Medical Department of Johns Hopkins University and was organized in 1893. The faculty comprises 11 professors, 17 clinical and associate professors, 16 lecturers and associates, and 25 instructors and assistants, a total of 69. The Johns Hopkins Hospital and Dispensary furnishes abundant and varied clinical material; the lying-in department of the hospital, opened in 1896, is in successful operation. The requirements for admission demand that the applicant either has, (a) completed the chemical-biologic course which leads to the A.B. degree in the University; (b) graduated at an approved college or scientific school, and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and such knowledge of physics, chemistry and biology as above indicated. If the candidate is unable to show this, he must pass a satisfactory examination covering this ground. This school is a member of the Association of American Medical Colleges. The anatomic, physiologic, pharmacologic, pathologic and clinical laboratories are large, well lighted and well equipped. The buildings are ample and built expressly for the purpose for which they are used. In the method of instruction special emphasis is laid upon practical work in the laboratories, dispensary and in the wards of the hospital. The first two years are devoted to practical work in the laboratories, combined with demonstrations, recitations and lectures, and during the remainder of the course opportunity for the personal study of cases is given. The work covers a graded course of four years and eight and a half months to the year. Final examinations, partly written and partly oral, include practical tests in laboratory and clinical work; the general character of the student's work is closely watched. The charge for tuition is $200 per annum, with no fees unless a microscope is rented; that fee is $5 a year. The Dean is Dr. William H. Howell, 232 W. Lanvale St., Baltimore. Total registration in 1901-2 was 229; graduates, 123. The tenth session begins Oct. 7, 1902, and ends June 15, 1903.

Maryland Medical College.—This school was organized in 1898, and has a faculty of 14 professors, and 14 associates, lecturers, etc., 28 in all. The Franklin Square Hospital and a college dispensary furnish clinical material. The course of study covers three years of eight months each, but after October, 1902, all students matriculating will be compelled to take a four years' course. A matriculation fee of $5 and total laboratory fees for the three years of $50 are charged; the tuition for full course is $75 each year. The Dean is Dr. J. Wm. Funck, 101 N. Fulton Ave. Total registration for 1901-2 was 128; graduates, 39. The fifth session begins Oct. 1, 1902, and closes in May, 1903.

MASSACHUSETTS.

Massachusetts, population 2,805,346, has four medical colleges: Medical School of Harvard University, Boston University School of Medicine, College of Physicians and Surgeons, and Tuft's College Medical School. They are all situated in Boston, a city of 500,892 inhabitants, and enjoy in common the following clinical advantages: The Massachusetts General Hospital, in which during the past year 5086 patients were treated in the wards and 31,003 in the out-patient departments; the

Boston City Hospital, where during that time 8719 ward patients and 22,640 out-patients were treated, and the Massachusetts Charitable Eye and Ear Infirmary, which furnished treatment for 22,349 patients during the past year. Library facilities are good. Board and lodging can be obtained for from $5 to $7 per week.

Boston.

MEDICAL SCHOOL OF HARVARD UNIVERSITY.—This was organized in 1872 as the Medical Department of Harvard University, and has a faculty composed of 23 professors, 12 associate and assistant professors, and 1 curator, a total of 36. Besides the clinical advantages mentioned, the Boston Lying-in Hospital, the Boston Dispensary, where 43,918 patients were treated last year; the Infants' Hospital, the Children's Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital all furnish excellent opportunity to the student for clinical study. Students are also permitted to visit the Free Hospital for Women and Carney Hospital on application to the physicians on duty. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by special vote of the faculty in each case." Each candidate is required to hand in the original note-book in which he recorded the work performed by him in qualitative analysis, and also to pass a written examination in theoretical and descriptive chemistry. If conditioned in chemistry one year is allowed in which to remove the condition. The laboratories and lecture rooms offer ample facilities and the equipment is good; special facilities are open to those desiring to pursue advanced or original work. The course of study covers four years of nine months each; the course is graded, and each correlated group as taken up presents sufficient variety to avoid monotony. A series of written, oral and practical examinations are distributed throughout the course of study. Fees: Matriculation, $5; for the first three years, $200 each, and for the last year, if the three previous years have been taken in this school, $130; total of other fees charged is $22. The Dean is Dr. William L. Richardson, 688 Boylston St. Total registration for 1901-2 was 496; graduates, 167. The 121st session begins Sept. 25, 1902, and ends June 24, 1903.

BOSTON UNIVERSITY SCHOOL OF MEDICINE.—Homeopathic. This school was organized in 1873; in 1874 the New England Female Medical College, founded in 1848, was merged into it. The faculty includes 20 professors, 20 associates and lecturers, and 18 instructors and assistants, a total of 58. Clinical material is furnished by the Massachusetts Homeopathic Hospital, containing 225 beds, a dispensary, a maternity hospital, and the Westborough Insane Hospital; 800 patients. Candidates who have taken their degree in arts, philosophy or science, are not examined; all others are examined in English, Latin, French or German or history, mathematics, physics and chemistry. The instruction is graded and covers a period of four years, eight months each. Total fees for the first year are $105; for the second and third, $125 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 295 Commonwealth Avenue. Total registration for 1901-2 was 125; graduates, 23. The thirtieth session opens Oct. 2, 1902, and closes June 3, 1903.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1880, and has a faculty of 21 professors, and 15 lecturers and assistants, a total of 36. Clinical facilities are furnished by the North End Hospital and Dispensary, Union General Hospital, and the city and state institutions. This school is a member of the Association of American Medical Colleges. The course of study covers graded work for four years of eight months each. The total fees for the first year are $100, and for each of the other years about $110, with a graduating fee of $30. The Registrar is Dr. John H. Jackson, 155 Franklin St., Fall River. Total students registered 1901-2, 131; graduates, 9. The twenty-third session begins Sept. 25, 1902, and ends June 26, 1903.

TUFTS COLLEGE MEDICAL SCHOOL.—This school was organized in 1893 as the Medical Department of Tufts College. It has a faculty of 16 professors, 6 assistant professors and 31 lecturers, instructors and assistants, a total of 53. Clinical material is furnished by the Boston Dispensary, Cambridge Hospital, St. Elizabeth's Hospital, Carney Hospital and the college dispensary; the student has also the advantages derived from an out-department in connection with the Boston Dispensary. "Graduates of a high school, college or university, and students having certificates of entrance to a college or university, or holding the state of New York Regents' certificate," also certain approved preparatory school graduates, are admitted without examination; all others must pass an examination in English, Latin, physics and mathematics, including arithmetic, elementary algebra and plane geometry. The laboratories and lecture rooms are ample in their equipment and capacity. Teaching is carried on by means of lectures, recitations and practical work in the laboratories and clinics; frequent examinations are held during a course and a final examination on completing the subject. Graded instruction covering four years of eight months each makes up the full course. The total fees are $125 each year; dissecting material is furnished at cost. The Dean is Dr. Harold Williams, 528 Beacon St. Total number of students for 1901-2 was 335; graduates, 35. The tenth session begins Oct. 2, 1902, and ends May 28, 1903.

MICHIGAN.

Michigan, population 2,420,982, has seven medical colleges. Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a town of 14,509 people. Board and lodging cost from $2.50 to $5 a week. Detroit, a city of 285,704 inhabitants, contains three medical colleges, as follows: Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery. Board and room can be obtained for $3 a week upwards. Grand Rapids Medical College is located in Grand Rapids, population 87,565, and here the cost of room and board is from $3 to $3.50 a week. The other school, Saginaw Medical College, is located in Saginaw, a city having a population of 42,345. Board and lodging can be procured for from $3 to $4.50 a week.

Ann Arbor.

UNIVERSITY OF MICHIGAN, DEPARTMENT OF MEDICINE AND SURGERY.—This department of the state university was organized in 1850, and has a faculty composed of 17 professors and junior professors, 15 associates and lecturers, and 35 instructors, assistants, etc., a total of 67. The University Hospital together with the lying-in department furnish the clinical facilities. There is now in process of erection a large ward to be known as the Palmer Ward, and also a psychopathic ward to accommodate 40 patients. The requirements for admission provide that the applicant, either by certificate or examination, show a sufficient knowledge of the following: English grammar, rhetoric and composition; United States and general history; algebra, through quadratics, plane and solid geometry and plane trigonometry; physics, biology and chemistry, these subjects to be accompanied by laboratory work; German or French, and Latin. The laboratories and their equipment are good, and the training in them and in didactic work is thorough. A large building, now nearing completion, and to be used for laboratory instruction and investigation, will be ready for occupancy at the beginning of the next session. This school is a member of the Association of American Medical Colleges. The curriculum embraces four years of nine months each. A combined course leading to degrees in both arts and medicine in six years is offered. The total fees for Michigan students for the entire course of four years is about $300, and for others $350. The Dean is Dr. Victor C. Vaughan, Ann Arbor. Total registration for 1901-2 was 508; graduates, 84. Next session begins Sept. 23, 1902, and will end June 18, 1903.

HOMEOPATHIC COLLEGE, UNIVERSITY OF MICHIGAN.—This department of the University was organized in 1875 and has a faculty of 6 professors, 3 assistants and 2 non-resident lecturers; the remainder of the teaching force utilized is that of the other departments of this University. The Homeopathic Hospital, containing 140 beds, furnishes material for clinical teaching. The course covers four years of nine months each. The total fees for Michigan students are about $240 for the four years, and for other students about $295. The Dean is Dr. W. B. Hinsdale. Total enrolment for 1901-2 was 55; graduates, 8.

Detroit.

DETROIT COLLEGE OF MEDICINE.—This school was formed in 1885 by the union of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, established 1880. The faculty embraces 21 professors, 44 lecturers, instructors, etc., and 30 clinical professors, a total of 95. Clinical facilities are offered by the following hospitals: St. Mary's and Harper, each of which contain a free dispensary; Woman's, St. Luke's, the Children's Free Hospital and the House of Providence. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The work includes laboratory, didactic and clinical study. Fees: Matriculation, paid once, $5; tuition, each term, $65; hospital and laboratory tickets, each $10; and diploma fee $30. The secretary is Dr. H. O. Walker. Total enrolment for 1901-2 was 242; graduates, 48. The next session begins Sept. 24, 1902; and will close May 7, 1903.

MICHIGAN COLLEGE OF MEDICINE AND SURGERY.—This school was organized in 1888, and has a faculty of 17 professors and 13 assistants, 30 in all. Clinical facilities are offered by a college dispensary, the Emergency Hospital and Detroit Eye and Ear Infirmary. This school is a member of the Association of American Medical Colleges. The course covers graded work for four years of seven months each. Fees: For the first two years, $85 each; third year, $70, and $95 for the fourth year. The Dean is Dr. Hal. C. Wyman, 46 W. Adams Ave., Detroit. Total registration for 1901-2 was 75; graduates, 13. The fifteenth session begins Sept. 18, 1902, and will end May 1, 1903.

DETROIT HOMEOPATHIC COLLEGE.—This was organized in 1899, and has a faculty of 37. Grace Hospital and a college dispensary are available for study of clinical cases. Unless possessing certificate of an equal amount of work completed, applicants for admission will be examined in English, arithmetic, history, geography and elementary Latin. The course embraces work for four years of seven months each. Fees: First year, $92; second, $85; third, $70, and $90 for the fourth year. The Dean is Dr. D. A. MacLachlan. Total enrolment for 1901-2 was 45; graduates, 6. The next session begins Sept. 24, 1902, and will close April 21, 1903.

Grand Rapids.

GRAND RAPIDS MEDICAL COLLEGE.—This was organized in 1897 as a three-year school, but the catalogue shows that all students matriculating after Jan. 1, 1901, will be compelled to take a four-year course of six months each. The faculty is made up of 21 professors and 6 assistants, in all 31. Clinical cases in the U. B. A. Hospital, St. Mary's, Woman's Butterworth hospitals, and St. John's Orphan Asylum and a college dispensary are available for study. The total fees are about $65 for each year. The Dean is Dr. C. H. White. Total enrolment for 1901-2 was 73; graduates, 47. Next session opens Oct. 1, 1902, and closes June 1, 1903.

Saginaw.

SAGINAW VALLEY MEDICAL COLLEGE.—This school was organized in 1896; it has a teaching force of 30. Clinical material is supplied by a college hospital and a college dispensary. Education equivalent to graduation from a recognized high school is required for admission. The course covers four years of seven months each. Fees: Matriculation, paid once, $5; tuition, each year, $50; laboratory and hospital and dissecting ticket each, $10, and graduation fee, $25. The Secretary is Dr. W. B. Cornell, Saginaw. Total enrolment for 1901-2 was 100; graduates, 41.

MINNESOTA.

Minnesota, population 1,751,394, contains three medical colleges: College of Homeopathic Medicine and Surgery, Hamline University College of Medicine, and College of Medicine and Surgery. They are all situated in Minneapolis, a city with a population of 202,718, and owing to its proximity to St. Paul, the following clinical advantages are available to them: City Hospital, Minneapolis; City Hospital, St. Paul; St. Luke's and St. Joseph's hospitals, both in St. Paul. The average cost of board and lodging is $20 a month. An agreement as to requirements for admission has been entered into between the University of Minnesota and Hamline University. They are (a) proof that the candidate has completed work in English composition and rhetoric; history, both ancient and modern; physiology, physics, algebra, geometry, and Latin equal to one year's work, or (b) ability to pass a satisfactory examination in these subjects.

Minneapolis.

College of Medicine and Surgery.—This is a department of the University of Minnesota and was organized in 1883. Until 1883 its work was only to examine for the degrees of B.M. or M.D., but at that time, with the absorption of the Minnesota Hospital Medical College and the St. Paul Medical College, it was reorganized and its present function assumed. Its faculty is made up of 26 professors, 10 clinical professors, 23 instructors and lecturers, and 22 assistants, a total of 81. Besides the clinical advantages enjoyed in common with other schools, St. Mary's, St. Barnabas and Asbury Methodist hospitals, the City and County hospitals of St. Paul and the St. Paul Dispensary, as well as the college dispensary, all furnish valuable material for clinical study. This college is a member of the Association of American Medical Colleges. The medical buildings, four in number, offer good laboratory and lecture-room facilities, and the equipment is all that is needed for thorough instruction. The curriculum covers four years of nine months each and the work is carefully graded. The total fees for each year is $100. The Dean is Dr. Parks Ritchie, Minneapolis. Total number of students registered for 1901-2 was 362; graduates, 61. The next session opens Sept. 17, 1902, and closes June 4, 1903.

Hamline University College of Medicine.—This was organized in 1883. Its faculty is composed of 24 professors, 6 associate and clinical professors, and 17 instructors and assistants, a total of 47. The laboratories and lecture rooms are large, well lighted and supplied with all the necessary equipment. Besides the hospitals mentioned, clinical work is offered to the student in City Hospital, Asbury Methodist Hospital, St. Barnabas and St. Mary's Hospitals in Minneapolis, Bethesda Hospital, City and County, and St. Joseph's, in St. Paul, and the college dispensary. This school belongs to the Association of American Medical Colleges. The course of study covers graded work for four years, nine months making a year. Total fees, first year, $85; second year, $87.50, and for each of the last two, $80. The Dean is Dr. L. M. Crafts, Minneapolis. Total number of students 1901-2 was 139; graduates, 34. The next session begins Sept. 17, 1902, and ends June 11, 1903.

College of Homeopathic Medicine and Surgery.—This is a department of the University of Minnesota and was organized in 1888. The faculty comprises 15 professors and 14 assistants, 29 in all. The primary branches are taught by the professors of the College of Medicine and Surgery. The course is graded, extending over four years of eight and one-half months each. The total fees for the first two years are $100 each, and $80 each for the last two years. The Dean is Dr. Alonzo P. Williamson, Minneapolis. Total number of students registered in 1901-2 was 21; graduates, 3. The next session opens Sept. 16, 1902, and closes June 5, 1903.

MISSOURI.

Missouri, population of 3,106,665, has fifteen medical colleges. St. Louis, population 575,238, contains six of these, viz.: St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Marion-Sims-Beaumont College of Medicine, Washington University Medical Department, and Barnes Medical College. Board and lodging can be procured for from $3.50 to $5 a week. Kansas City, with 163,752 inhabitants, has six colleges, namely: Kansas City Medical College, University Medical College, the Hahnemann Medical College of Kansas City, Woman's Medical College, Medico-Chirurgical College and Eclectic Medical University. Room and board can be obtained in this city for from $3 to $5 a week. Ensworth Medical College and Central Medical College are located in St. Joseph, population 102,979; board and room can be had for from $2.50 to $5 a week. The Department of Medicine of the University of Missouri is at Columbia, a town of 5651. Board and lodging can be obtained at Columbia for from $2 to $5 a week.

St. Louis.

St. Louis College of Physicians and Surgeons.—This school was organized in 1878, and has a faculty of 21 professors, 19 lecturers, demonstrators, and clinical instructors, and 4 special lecturers, a total of 44. The resources for clinical instruction are Jefferson Hospital, which is open to students of this college only; City Hospital, with 600 beds; Female Hospital, having 250 beds; City Insane Asylum; City Poorhouse and the college dispensary. This college is a member of the Association of American Medical Colleges. The laboratory and lecture-room space and the equipment are ample. The course of study covers four years of seven months each, and is graded. Total fees for the first year are $70, second $60, and third $60, and $75 for the fourth year. The Dean is Dr. Waldo Briggs, 1405 Olive St. Total number of students registered, 1901-2, was 280; graduates, 50. The twenty-fourth session begins Sept. 16, 1902, and ends April 9, 1903.

American Medical College.—Eclectic. This was organized in 1873, and has a faculty of 18 professors and 15 clinical instructors, a total of 33. Metropolitan Hospital, containing 40 beds, St. Louis City Hospital and a college dispensary supply ample clinical material. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges, of which this college is a member. The course of study covers four years of seven months each. The total fees are: tuition $75 per year, dissecting material $5 per year for three years, final examination and graduation fee $25. A scholarship, including four years, $250, paid $100 first year, $100 second year, $50 third year. If paid cash in advance, $240. Total registration for 1901-2 was 69; graduates, 14. The Dean is Dr. E. Lee Standlee. The present session opens Sept. 22, 1902, and closes April 22, 1903.

Homeopathic Medical College of Missouri.—This was organized in 1857 and has a faculty of 26 professors and 5 assistants, total 31. Clinical facilities are offered by the City Hospital, Children's Free Hospital and a college dispensary. The curriculum covers four years of seven months each. Fees: First year, $80; second, $75; third, $60, and $85 for the fourth year. The Dean is Dr. W. B. Morgan. Total registration for 1901-2 was 67; graduates, 12. The next session opens Sept. 22, 1902, and closes April 9, 1903.

Marion-Sims-Beaumont Medical College.—By the union of Marion-Sims, organized in 1890, and Beaumont Hospital Medical College, organized in 1886, the present school was founded. The faculty is composed of 38 professors, 33 lecturers and assistants, and 5 demonstrators, a total of 76. Clinical facilities are offered by Alexian Brothers' Hospital, with 250 beds; Rebekah Hospital, having a capacity for 50 patients; Josephine Hospital, 50 beds; Mt. St. Rose Throat and Chest Hospital, 150 beds; Good Samaritan Hospital, 50 beds; St. Mary's Infirmary, containing 150 beds; the City Hospital and Insane Asylum, each with a capacity of 600 patients. Grand Avenue Dispensary also furnishes good material for practical instruction. This school is a member of the Association of American Medical Colleges. The buildings afford ample laboratory and lecture-room space and they are well equipped. The course of study embraces laboratory and clinical instruction, with recitations and lectures. The curriculum covers four years of seven months each. The total fees for the first year are $80; for the second and third, $75 each, and $100 for the fourth. The Secretary is Dr. H. W. Loeb. Total number of students registered for 1901-2 was 488; graduates, 55. The next session opens Oct. 1, 1902, and closes May 1, 1903.

Washington University Medical Department.—This school was organized in 1891 from the St. Louis Medical College, which was founded in 1842. In 1899 the Missouri Medical College, organized in 1840, was added. The faculty comprises 36 professors, 19 clinical professors and lecturers, and 5 instructors, a total of 60. Clinical material is furnished by the St. Louis Mullanphy Hospital, St. John's Hospital, Polyclinic Hospital, Bethesda Hospital and O'Fallon's Dispensary. In addition to these, the City Hospital, Female Hospital, Insane Asylum and Poorhouse, are used in common with the other schools. The requirements for admission are those of the Association of American Medical Colleges. The college buildings, of which there are two, furnish good laboratory and lecture-room facilities. The course is four years of seven and one-half months each, and the system of study embraces laboratory, didactic and clinical teaching. The total fees for the first year are $121; second, $105, and for the third and fourth years, $100 each. The Dean is Dr. Robert Luedeking. Total registration of students for 1901-2 was 263; graduates, 43. The next session opens Sept. 25, 1902, and closes May 14, 1903.

Barnes Medical College.—This school was organized in 1892, and has a faculty of 24 professors, 9 lecturers and 11 assistants and instructors, a total of 44. The clinical advantages are those offered by Centenary Hospital, with 150 beds; City Hospital, the college dispensary and the outdoor obstetrical department. This college is a member of the Association of American Medical Colleges. The laboratories are well equipped and other facilities ample. The course of study includes graded work for four years of seven months each. The total fees for the first three years are $75 each, and $85 for the fourth year. The Secretary is Dr. Pinckney French, Century Bldg. Total registration for 1901-2 was 501; graduates, 78. The eleventh session opens Sept. 8, 1902, and closes April 9, 1903.

Kansas City.

Kansas City Medical College.—This was established in 1869, and has a faculty of 23 professors, and 22 lecturers, demonstrators, etc., in all 45. The clinical facilities are those of St. Joseph's Hospital, which also contains an out-patient department; the City Hospital, Bethany Hospital, Scarritt Hospital, St. Anthony's Home for Children and the college dispensary. This college is a member of the Association of American Medical Colleges. The building is large and well equipped, the course is graded and the classes in practical work are divided into small sections and required to personally conduct series of obstetric, medical and surgical cases as a condition of graduation. The curriculum embraces four years of seven months each. The total fees for the first three years are $75 each, and $85 for the fourth. The Dean is Dr. Robt. T. Sloan, Rialto Bldg. Total registration for 1901-2 was 111; graduates, 21. The thirty-fourth session begins Sept. 16, 1902, and ends March 25, 1903.

University Medical College.—This was organized in 1881 as the University of Kansas City Medical Department and in 1888 was reorganized under its present name. Its faculty comprises 21 professors, 11 adjunct professors and lecturers, and 14 assistants, a total of 46. Clinical material is furnished by the University Hospital, owned by the college, with 100 beds; the City Hospital, German Hospital, Home for the Aged, containing 147 beds; the Sisters' Hospital, Scarritt and St. Margaret's hospitals, the Children's Home, St. Joseph's Orphan Asylum, and the college dispensary and obstetric department. Instruction is given by means of lectures, recitations, demonstrations, and laboratory work and clinics. The school is a member of the *Association of American Medical Colleges*. The college building, which has been recently enlarged, furnishes ample accommodations for laboratories and lecture rooms. The course of study covers four years of six months each, and the work is graded. The total fees for each of the first two years are $80, for the third $60, and $85 for the fourth year. The Dean is Dr. Samuel C. James, Bryant Bldg. The total number of students registered in 1901-2 was 225; graduates, 27. The twenty-second session begins Sept. 9, 1902, and ends March 27, 1903.

Kansas City Hahnemann Medical College.—*This school was* formed by the union of the Kansas City Homeopathic Medical College, organized in 1888, and the Kansas City University College of Homeopathic Medicine and Surgery. It has a faculty of 32. The City Hospital, Homeopathic Hospital, the Sanitarium, Scarritt, University, Women's and Children's, German, Bethany and Children's hospitals are open to its students for clinical study. The college dispensary and clinics also supply clinical material. Applicants for admission must show by diploma, certificate or examination that they have a sufficient knowledge of English, arithmetic, geography, United States history, and Latin equal to one year's work. The course covers four years of seven months each. Total registration for 1901-2 was 72; graduates, 10. The fifteenth session begins Sept. 9, 1902, and closes April 9, 1903. The Dean is Dr. S. H. Anderson, 1214 Main St.

Woman's Medical College.—This school was organized in 1895, and has a faculty composed of 33 professors, 11 lecturers and assistants, a total of 44. Material for clinical study and demonstration is furnished by St. Joseph's, Scarritt, German, Sisters', Agnew, St. Margaret's and City hospitals, and the college dispensary. The requirements for admission are those of the Association of American Medical Colleges. The course of study embraces graded work for four years of seven months each. The total fees for the first year are $68; second, $60; third, $55, and $80 for the fourth year. The Dean is Dr. Nannie P. Lewis, 1219 Wyandotte St., Kansas City. Total number of matriculants for 1901-2 was 216; graduates, 6. The eighth session opens Sept. 17, 1902, and closes March 26, 1903.

Medico-Chirurgical College.—This school was organized in 1897 as the Kansas City College of Medicine and Surgery of Kansas City, Kan., and was reorganized the following year under its *present name. Its faculty embraces a total of 41. Clinical facilities* are furnished by the hospitals of Kansas City used in common by the medical colleges, and a college dispensary. The course *covers four years of six months each. The fees are: For the first* year, $70; second, $65; third, $55, and $75 for the fourth year. The Dean is Dr. George O. Coffin, 400 New Ridge Building. Total registration for 1901-2 was 87; graduates, 13. The *present session* opens Sept. 17, 1902, and closes March 20, 1903.

Eclectic Medical University.—This was organized in 1898 *and has 20 in its faculty. The curriculum covers four years of* six months each. Fees, about $70 each year, with a graduation fee of $15. The Dean is Dr. Theodore Doyle. Total students for 1901-2 was 49; *graduates, 12. The next session begins Sept.* 15, 1902, and ends March 13, 1903.

Columbia.

Department of Medicine of the University of the State of Missouri.—This department was organized at Columbia ni 1872. The *faculty includes* 12 professors, 18 assistants, lecturers, etc., a total of 30. Clinical facilities are supplied by the Parker Memorial State Hospital and the Boone County Infirmary. A new $40,000 building for the medical laboratories has just been completed and has excellent equipment. Special emphasis is laid on thorough training in the scientific branches which constitute the foundation of medicine. Four years' course, nine months each, *carefully graded.* The University offers also a combined course of six years, conferring degrees in both arts and medicine. The entrance requirements are a diploma from a good high school, or the full equivalent. There is no charge for tuition, the only expense being a library fee of $5 each year, and small laboratory fees. The Dean is Dr. A. W. McAlester. Total registration of students for *1901-2* was 90 (no graduates). The next session opens Sept. 9, 1902, and closes June 3, 1903.

St. Joseph.

Ensworth Medical College.—This was organized in 1888, and has a faculty of 19 professors and 12 lecturers and assistants, 31 in all. St. Joseph's Medical Hospital, with 250 beds; City Hospital, containing 40 beds; the State Hospital No. 2, which is open to the students once a week, and a college dispensary furnish clinical material. Applicants for *admission* must show by certificate or examination, that they possess a sufficient knowledge of English, arithmetic, algebra, physics and Latin equal to one year's instruction. The building furnishes ample laboratory and lecture-room facilities. The curriculum covers a graded course of four years of six months each. The fees are about $55 each for the first three years, and $75 for the fourth year. The Dean is Dr. Jacob Geiger, St. Joseph. Total enrolment for 1901-2 was 80; graduates, 14. The present session opened Sept. 1, 1902, and closes March 1, 1903.

Central Medical College.—This school was organized in 1894, and has a faculty made up of 16 professors and 14 lecturers, in all 30. The Methodist and St. Joseph's hospitals, State Hospital No. 2, and the City and County hospitals are available for clinical study; a college dispensary also supplies clinical material. The requirements for admission are the possession of a certificate for work completed, or an examination. The curriculum embraces four years of six months each. Fees: First year, $55; second, $50; third, $50, and $75 for the fourth year. The Secretary is Dr. T. E. Potter. Total enrolment for 1901-2 was 82; *graduates, 11.* The eighth session began Sept. 1, 1902, and will end March 1, 1903.

NEBRASKA.

Nebraska, population 1,066,300, has three medical colleges: Omaha Medical College, and John A. Creighton Medical College, in Omaha (population 102,555); and Lincoln Medical College, at Lincoln (population 40,169).

Omaha.

University of Nebraska College of Medicine.—This was organized in 1881 as Omaha Medical College. The name was changed this year and, *as soon as practicable, the first two years' work will* be done at the University at Lincoln. The last two years will continue to be conducted at Omaha, population 102,555. The faculty is composed of 28 professors, 18 adjunct professors and lecturers, a total of 46. The Douglas County Hospital, accommodating 300 patients; Bishop Clarkson Memorial Hospital, Immanuel Hospital, the Omaha Methodist Hospital and the college dispensary furnish good material for clinical study and demonstration. This college is a member of the Association of American Medical Colleges. The college building is well adapted for its purpose and the laboratories and lecture rooms are commodious and completely equipped. The course of work embraces graded studies covering four years of eight months each. The method of instruction is made up of didactic and clinical lectures, demonstrations, quizzes and laboratory work. The total fees for the first two years are $80 each, and $85 for each of the last two years. Board and lodging can be obtained for from $3 to $5 a week. The Secretary is Dr. Ewing Brown, Omaha. Total number of students registered in 1901-2 was 153; graduates, 38. The twenty-second session begins Sept. 10, 1902, and will end May, 1903.

John A. Creighton Medical College.—This school, organized in 1892, is the Medic[illegible] University, and has a faculty of 27 [illegible] lecturers, and 7 assistants, a total of [illegible] are those of St. Joseph's Hospital, containing 300 beds and having a clinical amphitheater connected with it; St. Bernard's Hospital, with 160 beds; Douglas County Hospital, Presbyterian Hospital, and the college dispensary; the material is abundant and varied. The school is a member of the Association of American Medical Colleges. The building, which was completed in 1898, contains excellent facilities for laboratory and lecture-room work, and the equipment is good. In the methods of instruction, including clinical, didactic and laboratory work, special emphasis is laid on practical work. The course of study embraces four years of eight months each. The total fees for the first two years are $80 each, and $85 for each of the last two years. The Dean is Dr. D. Bryant, McCague Bldg. Total number of students registered in 1901-2 was 151; graduates, 37. The tenth session opens Sept. 23, 1902, and closes May 1, 1903.

Lincoln.

Lincoln Medical College.—Eclectic. This was organized in *1889 and has a faculty of 25. The City Hospital and the college* dispensary furnish clinical material. The requirements for admission are those of the National Confederation of Eclectic Medical *Colleges, of which this college is a member. The course of study* covers four years of thirty-two weeks each. The total fees for the first year are $83; second, $78; third, $70, and $65 for the fourth year. The Dean is Dr. J. M. Keys, Omaha. Total number of students for 1901-2 was 98; graduates, 21. The present session begins Sept. 15, 1902, and ends May 21, 1903.

NEW HAMPSHIRE.

New Hampshire, population 411,588, contains one medical college.

Hanover.

Dartmouth Medical School.—This is the Medical Department of Dartmouth College, located in Hanover, population 1884. The school was organized in 1797. Its faculty is made up of 15 professors and 5 instructors, 20 *in all. The Mary Hitchcock Memorial* Hospital and a cottage hospital of 36 beds, supply the clinical material. Applicants for admission must possess an education at least equivalent to *graduation from a registered high school.* The laboratories afford good facilities for work in physics, biology, chemistry and physiology. The course covers four years of thirty-two weeks each. *Total fees for the first three years are* $110, and $135 for the fourth year. The Dean is Dr. William T. Smith. The total number of students registered for 1901-2 was 72; graduates, 15. The work for the entering class begins with that of the academic department, commencing Sept. 12, 1902, and closing April 9 and June 21, 1902; for the advanced classes it begins in July and ends in February.

NEW YORK.

New York State, population 7,268,894, has ten medical colleges. Seven of these, College of Physicians and Surgeons, Long Island College Hospital, New York Homeopathic Medical College, New York Medical College, Eclectic Medical College, Cornell University Medical College and the University and Bellevue Hospital Medical College are located in New York City, population 3,437,202. This city, with its hospitals and dispensaries, offers abundant clinical material. Board and lodging can be obtained for from $5 to $7 a week.

Albany Medical College is located in Albany, a city of 94,151 people, where board and room can be had for from $4 to $5 a week.

The University of Buffalo Medical Department is situated in Buffalo, population 352,387; here board and lodging can be obtained for from $3.50 to $5 per week.

The College of Medicine, Syracuse University, is in Syracuse, a city with 108,374 inhabitants. Board and lodging can be procured for from $3.50 a week upwards.

The laws of the state of New York require of the prospective student of medicine a preliminary education equivalent to that obtainable in a four years' course in any of the public high schools recognized by the regents as maintaining a satisfactory standard. Upon proof of at least this amount of education, a medical-student certificate will be issued by the state authorities. The colleges, therefore, have a common standard for the requirements of admission.

New York City.

College of Physicians and Surgeons.—This school was organized in 1807 and its present relation, that of Medical Department of Columbia University, was assumed in 1860. The faculty embraces 11 professors, 23 clinical and adjunct professors and 75 demonstrators, instructors, etc., a total of 109. The Vanderbilt Clinic, where 47,156 patients were treated during the year 1901, and which is equipped with all modern appliances for the study and treatment of disease, and Sloane Maternity Hospital, containing 116 beds, offer exclusive clinical advantages to students of this school. Besides these, Roosevelt Hospital, containing 238 beds; New York Hospital, with 150 beds; Bellevue, 850 beds; Presbyterian, 330 beds; St. Luke's, General Memorial, and New York Foundling hospitals, together with the Eye and Ear Institute, containing 40 beds, St. Mary's Free Hospital for Children, and the Hospital for the Ruptured and Crippled, all offer free clinical teaching to matriculants of this school. The laboratories, lecture rooms and amphitheaters are ample in equipment and accommodation; special provisions are made to equip each student thoroughly in each of the laboratories and thus make the work individual. The work is graded, covering four years of eight months each. The total fees for the first year are $205; for the second and third, $200 each, and $225 for the fourth year. The Dean is Dr. James W. McLane. Total registration for 1901-2 was 778; graduates, 145. The next session begins Oct. 6, 1902, and ends June 10, 1903.

Long Island College Hospital.—This was organized in 1858, and has a faculty of 11 professors, 13 adjunct and clinical professors and 45 lecturers, instructors, etc., a total of 69. Long Island College Hospital, containing 300 beds and being connected with a four-story maternity hospital; Polhemus Memorial Clinic, and Hoagland Laboratory, completely equipped with the most modern apparatus, are all a part of the college. Besides the clinical facilities furnished by these, members of the faculty attend at Kings County, St. John's, Brooklyn, Norwegian, Williamsburg, Methodist Episcopal and the Brooklyn Eye and Ear hospitals, where the students are offered opportunities for clinical study. Many of these also contain out-patient departments, thus permitting advanced students to attend personally to cases. Bedside instruction is also given in the wards. The course covers four years of thirty weeks each. Fees: First year, $190; second, $195; third, $160, and $145 for the fourth year. The Secretary is Dr. Joseph H. Raymond, New York City. Total registration, 1901-2, was 245; graduates, 31. The forty-fifth session opens Oct. 1, 1902, and closes May 15, 1903.

New York Homeopathic Medical College and Hospital.—This school, organized in 1861, has a faculty of 27 professors and 21 lecturers, instructors, etc., 48 in all. Flower Hospital, adjoining the college and having a completely equipped out-patient department, Metropolitan Hospital, New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children furnish the clinical facilities. The course covers four years of seven months each. Total fees for the first year, $110; second, $130; third, $125, and $155 for the fourth year. The Dean is Dr. W. H. King, 64 W. 51st St. Total number of students registered for 1901-2 was 106; graduates, 23. The next session begins Sept. 30, 1902, and ends May 7, 1903.

New York Medical College and Hospital for Women.—Homeopathic. This school was organized in 1863, and has a faculty of 21 professors, 3 adjuncts, and 14 lecturers, and 6 assistants, a total of 44. The college hospital and dispensary, the Memorial Hospital for Women, Metropolitan, Flower and the Laura Franklin Free Hospital for Children afford clinical material. The course covers four years of twenty-six weeks each. Fees: First year, $100; second, $110; third, $100, and $130 for the fourth year. The Dean is Dr. M. Belle Brown, 30 W. 51st St. Total registration for 1901-2 was 32; graduates, 6. The next session opens Sept. 30, 1902, and closes May 12, 1903.

Eclectic Medical College.—This was organized in 1865 and has a faculty of 12 professors and 23 lecturers, demonstrators, etc., 35 in all. A college dispensary, Beachonian Dispensary, Manhattan and Red Cross hospitals and Muncie Sanatorium supply clinical facilities. The work covers four years of seven months each. Total fees: First year, $125; second, $125; third, $125, and $155 for the fourth year. The Dean is Dr. George W. Boskowitz. Total registration for 1901-2 was 100; graduates, 7. The next session opens Sept. 24, 1902, and closes May, 1903. This school is a member of the National Confederation of Eclectic Medical Colleges.

Cornell University Medical College.—This department of Cornell University was established in 1898. The faculty is composed of 21 professors, 10 clinical professors, 36 instructors, and 67 clinical instructors and assistants, a total of 134. The City Hospital, having 1000 beds; Bellevue Hospital, New York Hospital, Presbyterian, Willard Parker and Reception, with 200 beds; New York Skin and Cancer; St. Francis, having a capacity of 230 beds; St. Vincent's, with 200 beds; the Manhattan Eye and Ear Hospital, and the Eye and Ear Infirmary, in addition to a large college dispensary, furnish the clinical resources; the material is abundant and varied. The first two years of the course are taken at New York or at Ithaca and the work is devoted to the fundamental scientific subjects. The last two years are spent mostly in practical and clinical work and the hospital advantages are utilized. The Loomis Laboratory, a five-story modern building, is well equipped and supplies ample practical laboratory facilities required in the advanced work. "The essential feature of the entire system is the division of the classes of the several years into small sections." Fees: First year, $190; second and third, $180 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1901-2 was 415; graduates, 53. The next session opens Oct. 1, 1902, and closes June 3, 1903.

University and Bellevue Hospital Medical College.—This is a department of the New York University, and was founded in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. The faculty is composed of 30 professors, 33 clinical professors and lecturers, and 50 instructors, demonstrators, etc., in all 113. Bellevue and City hospitals, hospitals of the Workhouse and Almshouse, Manhattan State Hospital for the Insane, Willard Parker and Reception hospitals, Riverside Hospital for Contagious Diseases, Randall's Island, Presbyterian, St. Luke's, St. Vincent's, General Memorial, Gouverneur, Columbus, Harlem, New York Foundling, and the Society for the Lying-in hospitals, the New York Eye and Ear Infirmary, and a large college dispensary are open to students of this school for a study of clinical cases. The Carnegie building, a new five-story structure adjoining the college, is devoted to laboratory instruction and investigation, and, with the other two large college buildings, affords good laboratory and lecture-room facilities. The course of instruction covers four years of eight months each. Actual clinical teaching, in conjunction with and founded on laboratory work, recitation and didactic teaching, is emphasized to the greatest possible degree. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Edward G. Janeway. Total registration for 1901-2 was 319; graduates, 48. The next session opens Oct. 1, 1902, and closes June 4, 1903.

Albany.

Albany Medical College.—This school was organized in 1838, and in 1873 it assumed its present relations, as Medical Department of Union University. The faculty is composed of 14 professors, 7 adjunct and clinical professors, and 30 lecturers, instructors and assistants, a total of 51. Albany, St. Peter's, Child's and County hospitals, South End Dispensary, Eye and Ear Infirmary and the Albany Hospital for Incurables, also the free dispensaries connected with each, are open to students for clinical study. The curriculum embraces graded work for four years of seven and one-half months each. Teaching is carried on in the laboratories, clinics and lecture rooms. Examinations are held twice a year in all subjects. Fees: Third year, $110, and $130 for each other year. The Dean is Dr. Albert Vander Veer. Total registration for 1901-2 was 154; graduates, 26. The next session opens Sept. 23, 1902, and closes May 5, 1903.

Buffalo.

University of Buffalo Medical Department.—This was organized in 1846 and has a faculty made up of 7 professors, 41 adjunct and clinical professors, and 31 lecturers, etc., a total of 79. Buffalo General Hospital, Hospital of the Sisters of Charity, Erie County and German hospitals and the German Deaconess' Hospital supply ample clinical material for study. A college dispensary, recently organized, is also of value in practical work. The buildings and hospitals are well equipped for clinical and laboratory work. Bedside instruction is insisted on and the senior students are permitted to assist in operations and give anesthetics. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The total fees are: First year, $455; second, $55, and $15 each for the third and fourth years. The Dean is Dr. Matthew D. Mann, 37 Allen St. Total registration for 1901-2 was 239; graduates, 38. The fifty-seventh session opens Sept. 29, 1902, and closes May 6, 1903.

Syracuse.

College of Medicine, Syracuse University.—This school was organized in 1872, as the Medical Department of Syracuse University. The faculty is composed of 16 professors and 29 lecturers, instructors, etc., in all 45. Clinical facilities are furnished by St. Joseph's Hospital, with a capacity of 200 patients; Hospital of the House of the Good Shepherd, Syracuse Hospital for Women and Children, Onondaga County Orphan Asylum, and the Syracuse Free Dispensary. The laboratories and amphitheaters are large and well equipped. This school is a member of the Association of American Medical Colleges. The curriculum embraces a four years' graded course, eight months making a school year. The total fees for each of the four years are $130. The Dean is Dr. Henry D. Didama, 424 S. Salina St. Total number of students registered for 1901-2 was 128; graduates, 9. The next session opens Oct. 7, 1902, and closes June 10, 1903.

NORTH CAROLINA.

North Carolina, population 1,893,810, has three medical schools. They are, Leonard School of Medicine, North Carolina Medical College, and the University of North Carolina Medical Department.

Raleigh.

Leonard School of Medicine.—This school was established in 1882 by the American Baptist Home Mission Society, for the purpose of training colored students of medicine. It is located in Raleigh, a city of 13,643, and has a faculty of 8 teachers. A free hospital and dispensary supply clinical material. A preliminary entrance examination is given to applicants not possessing a certificate or diploma of educational requirements. The course covers four years of six months each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room costs $2 a week. The Dean is Dr. James McKee. Total enrolment for 1901-2 was 106; graduates, 21. Next session opens Oct. 1, 1902, and closes April 14, 1903.

University of North Carolina Medical Department.—This school was organized in 1891, and formerly gave only the work of the first two college years, at Chapel Hill. In 1902 the course was extended to four years by the establishment of a department at Raleigh in which the last two years are given. Degrees will now be conferred and the faculty in the completed school of medicine numbers 25. It is a member of the Association of American Medical Colleges. The number of students enrolled in 1901-2 was 62. The President is Dr. F. P. Venable, Chapel Hill.

Davidson.

North Carolina Medical College.—This school was organized in 1893 and has a faculty of 16. It is located at Davidson, a village of 904 people, and a small hospital supplies the clinical facilities. The course covers but three years of eight months each. The requirements for admission claimed are those established by the Association of American Medical Colleges. Fees: First and second years, $85, and $100 for the third year. The President is Dr. J. P. Monroe. The total registration for 1901-2 was 55; graduates, 18. The session began Sept. 4, 1902, and closes May 11, 1903.

OHIO.

Ohio, population 4,157,545, has eleven medical colleges. Five of these, the Medical College of Ohio, Eclectic Medical Institute, Miami Medical College, Pulte Medical College and the Laura Memorial Woman's Medical College, are located in Cincinnati, a city of 325,902 inhabitants. The clinical advantages of Cincinnati are good; beside many smaller hospitals, the Cincinnati Hospital is open to the students for study. Board can be procured in Cincinnati for from $3 to $5 per week.

Cleveland, population 381,768, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. The City Hospital, with 275 beds, is used in common by them for clinical study. Board and lodging can be had for from $2.50 to $5 a week.

Columbus, population 125,560, contains two: Starling Medical College and Ohio Medical University. Board and lodging cost from $2.50 to $5 per week.

Toledo, with 131,822 people, has one medical school: Toledo Medical College. It has good clinical advantages. Board and room can be had for from $3 to $5 per week.

The laws of Ohio require that in order to practice medicine in this state, any student not possessing a diploma or certificate showing that he is possessed of the educational advantages required, must pass a satisfactory examination, under the direction of the State Board of Medical Registration and Examination, in the following subjects: English, including rhetoric and spelling; geography, arithmetic, algebra, physics, botany, United States history and Latin equal to a year's work. This is the standard adopted by all the medical colleges in the state.

Cincinnati.

Medical College of Ohio.—This is the Medical Department of the University of Cincinnati, organized in 1819, and has a faculty made up of 22 professors, 33 lecturers and assistants, a total of 55. Good Samaritan Hospital, with 150 beds; Cincinnati Hospital, with 550 beds, and a well-equipped college dispensary furnish clinical facilities. The buildings supply ample laboratory and lecture-room space, and their equipment is good. The course of study is graded and covers four years of seven months each. This school is a member of the Association of American Medical Colleges. The total fees are, for the first year, $105; for the second and third, $100 each, and $125 for the fourth year. Total registration of students for 1901-2 was 180; graduates, 47. The Dean is Dr. P. S. Conner, Cincinnati. The eighty-fourth session begins Oct. 1, 1902, and ends May, 1903.

Eclectic Medical Institute.—This school, organized in 1845, has a faculty of 29 members. The Seton Hospital, Cincinnati Hospital, and a college dispensary furnish clinical material. It is a member of the National Confederation of Eclectic Medical Colleges. The course covers four years of twenty-eight weeks each. The fees are $75 for each year, with a graduation fee of $25. The Dean is Dr. F. J. Locke, Newport, Ky. Total enrolment, 1901-2, was 143; graduates, 36. The next session begins Sept. 22, 1902, and closes April 14, 1903.

Miami Medical College.—This school was organized in 1852 and has a faculty of 23 professors and 27 lecturers and demonstrators, a total of 50. The clinical facilities are furnished by the Cincinnati Hospital and a college dispensary. This college is a member of the Association of American Medical Colleges. The curriculum embraces a four-year graded course of seven months each. The total fees are, for the first year, $115; for the second and third, $110, and $130 for the fourth year. The Secretary is Dr. J. C. Oliver, 628 Elm St. The total registration for 1901-2 was 97; graduates, 31. The next session opens Oct. 1, 1902, and closes May 6, 1903.

Pulte Medical College.—Homeopathic. This was organized in 1872 and has a teaching force of 19 professors and 19 assistants, 38 in all. Pulte Hospital, Cincinnati Hospital, Bethesda Hospital, Home of the Friendless and Foundlings, and a college dispensary supply clinical material. The curriculum covers four years of seven months each. Fees: First year, $80; for the second and third, $75 each, and $100 for the fourth. The Dean is Dr. J. D. Buck. Total enrolment for 1901-2 was 40; graduates, 10. The next session opens Oct. 1, 1902, and closes May 5, 1903.

Laura Memorial Woman's Medical College.—This school was formed in 1895 and has a faculty of 26. Presbyterian and Cincinnati hospitals and an extensive college dispensary supply material for clinical study. The out-patient department of the Presbyterian Hospital and interneship in the same hospital are open to students in this school exclusively. A special feature of instruction is a thoroughly equipped department in radiography. This college is a member of the Association of American Medical Colleges. The course embraces four years of study of seven months each. The total fees are $50 for each year. This includes all laboratory courses, which are ample in every facility. The Dean is Dr. John M. Withrow, Cincinnati. Total registration of students for 1901-2 was 26; graduates, 9. The next session opens Oct. 1, 1902, and closes May 5, 1903.

Cleveland.

Western Reserve University Medical College.—The Medical Department was organized in 1843. Its teaching faculty includes 18 professors, 21 lecturers and demonstrators, and 12 assistants, a total of 51. Clinical facilities are offered students of this school by Lakeside Hospital, having 250 beds; St. Vincent's Hospital, having about 135 beds; City Hospital, with 250 beds; St. Alexis Hospital, with 100 beds, and the Home of Maternity, with the dispensary service at Lakeside and Charity hospitals. The new clinical laboratory has recently been added, where a systematic course of instruction is given. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight months each. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 278 Prospect St. Total enrolment for 1901-2 was 126; graduates, 36. The next session begins Oct. 1, 1902, and ends June 23, 1903.

The Cleveland College of Physicians and Surgeons.—This was organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869 and became the Medical Department of Ohio Wesleyan University in 1896. The faculty is composed of 25 professors, 33 associates, lecturers and assistants, 58 in all. Cleveland General Hospital, City Hospital, St. Alexis Hospital, St. John's Hospital and a college dispensary are available for clinical teaching. This school is a member of the Association of American Medical Colleges. The school holds a continuous session, two terms of four months each constitute a year's work. The total fees for the first two years are $130 each, and for the last two years, $117 and $110, respectively. The Dean is Dr. N. S. Scott, 531 Prospect St. Total enrolment for 1901-2 was 86; graduates, 30. The next term opens Sept. 17, 1902.

Cleveland Homeopathic Medical College.—This school was founded in 1890 by a consolidation of Cleveland University of Medicine and Cleveland Medical College. The faculty includes 27 professors and 21 adjuncts, lecturers, etc., 48 in all. The clinical facilities are obtained from the Cleveland Homeopathic Hospital, and a college dispensary. The course embraces four years of thirty weeks each. Fees: First year, $110; second and third years, $105 each, and $125 for the fourth year. The Dean is Dr. Gaius J. Jones. Total number of students registered, 1901-2, was 112; graduates, 23. The next session opens Sept. 17, 1902, and closes April 15, 1903.

Columbus.

Starling Medical College.—This school was organized in 1847 and has a faculty composed of 13 professors and 16 lecturers, associates, etc., a total of 29. St. Francis Hospital, which is under the control of this faculty, Hawke's Hospital, of Mt. Carmel, the Lawrence Hospital for Women, and a college dispensary are available for clinical study. This college is a member of the Association of American Medical Colleges. The work covers four years of seven months each. Fees: First year, $73; second, $71; third, $60, and $80 for the fourth year The Dean is Dr. Starling Loving. Enrolment for 1901-2 was 162; graduates, 32. The next session opens September, 1902, and closes April, 1903.

Ohio Medical University.—This school was organized in 1890 and has a faculty of 23 professors and 9 assistants, 32 in all. The Protestant Hospital, Ohio Penitentiary Hospital and a college dispensary provide material for clinical work. The amphitheaters and laboratories are well equipped. This school is a member of the Association of American Medical Colleges. The course is four years of seven months each. Fees: First year, $86; second year, $79; third, $51, and $61 for the fourth year. The Dean is Dr. George M. Waters Total students for 1901-2 was 232; graduates, 61. The present session begins Sept. 17, 1902, and ends April 16, 1903.

Toledo.

Toledo Medical College.—This school was organized in 1882 and has a faculty of 18 professors, 15 lecturers and 6 assistants, in all 39. Toledo Hospital, St. Vincent's and Robinwood hospitals, Lucas County Infirmary Hospital, Toledo Hospital for the Insane, and a free dispensary supply good clinical facilities. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of seven months each. The fees are $75 for each year with a matriculation fee of $5, payable once. The Secretary is Dr Park L. Myers, 1921 Franklin Ave. Total enrolment for 1901-2 was 52; graduates, 10. The next session opens Sept. 25, 1902, and closes April 23, 1903.

OREGON.

Oregon, population 413,536, has two medical colleges: Medical Department Willamette University, and University of Oregon, Medical Department.

Salem.

Medical Department Willamette University.—This school is situated in Salem, a town of 4,258 people, and was organized in 1864. The faculty consists of 15 teachers. Clinical facilities for study are supplied by Salem Hospital, and a college dispensary. This school is a member of the Association of American Medical Colleges. The course embraces four years' work of six months each. Fees: First year, $110; second, $100; third, $75; and $50 for the fourth year. Board and lodging costs from $3 to $5 a week. The Dean is Dr. W. H. Byrd, Salem. Total enrolment for 1901-2 was 27; graduates, 5. The next session begins Oct. 1, 1902, and ends April 2, 1903.

Portland.

University of Oregon Medical Department.—This department of the State University was organized in 1887 and has a faculty of 15 professors and 11 special lecturers, a total of 26. It is situated in Portland, population 98,000. Good Samaritan and St. Vincent's hospitals, containing 200 and 350 beds, respectively, furnish good material for clinical study. The requirements for admission are those of the Association of American Medical Colleges. The college building is modern and well equipped, presenting ample teaching facilities. The course is four years of six months each. Fees: First year, $142.50; second, $107.50; third, $137.50, and for the fourth the only fee is $7.50 for examination fee. Board and room can be obtained for from $4 to $6 a week. The Dean is Dr. Simeon E. Josephi, Portland. Total number of students for 1901-2 was 80; graduates, 20. The next session opens Oct. 1, 1902, and closes April, 1903.

PENNSYLVANIA.

Pennsylvania, population 6,302,115, has six medical colleges. Of these Philadelphia, having a population of 1,293,697, contains five, as follows: University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, and the Medico-Chirurgical College of Philadelphia. The clinical facilities of Philadelphia present abundant and varied material for study. Besides the individual hospitals connected with each of the schools the charity hospitals are open to all the students in common. Board and lodging costs from $4 a week upwards.

The other school, Western Pennsylvania Medical College, is situated in Pittsburg, a city of 321,616 people. The cost of board and lodging is from $4 to $6 a week.

A preliminary examination is required of all applicants for a license to practice medicine or surgery in the state. This examination is held at stated intervals by the State Examiners, and includes: (a) English composition, grammar and rhetoric; (b) mathematics, covering algebra and plane geometry; (c) elementary physics; (d) United States history, and (e) Latin equivalent to a year's study. Upon passing a successful examination a medical student certificate is issued to the applicant. This certificate will admit the possessor to matriculation in any medical college in the state.

Philadelphia.

University of Pennsylvania Department of Medicine.—This is the first medical college established in this country, having been organized in 1765 as the Medical Department of the College of Philadelphia; the first degrees were granted in 1768. When from the College of Philadelphia the University of Pennsylvania was organized in 1791, it became the Medical Department of the University, its present relation. The faculty is made up of 19 professors, 6 clinical professors, and 76 assistants, lecturers, etc., a total of 101. Abundant and varied clinical material is furnished by the University Hospital, where during 1900 there were 14,936 cases treated; Maternity Pavilion, with 50 beds; Philadelphia Hospital, containing 1000 beds; Pennsylvania, Children's and German hospitals, and the Southeastern Hospital and Dispensary. Special attention is paid to bedside instruction and to thoroughly practical work. Applicants for admission must furnish evidence of the education required to enter the academic department of the University. The buildings known as Medical Hall, Laboratory Hall and the Laboratory of Hygiene supply excellent laboratory and lecture-room facilities and they are well equipped. The course embraces study for four years of nine months each. The total fees for each year are $200 each, with a matriculation fee of $5 for the first year. The Dean is Dr. John Marshall. Total enrolment for 1901-2 was 542; graduates, 151. The next session opens Sept. 26, 1902, and closes on the third Wednesday in June, 1903.

Jefferson Medical College.—This school was organized in 1826, and has a faculty of 15 professors, 11 clinical and adjunct professors, and 58 lecturers, demonstrators, etc., a total of 84. Jefferson Hospital, together with its Maternity Department, are used exclusively by students of the school for clinical study. Bedside instruction is given daily to small sections of the senior class. In addition, the following hospitals are open for study of clinical cases: Pennsylvania, Philadelphia, St. Joseph's, German, Municipal and Wills Eye hospitals. This college is a member of the Association of American Medical Colleges. The course of study covers graded work of four years of eight months each. The laboratories are large and well equipped, a new five-story laboratory building having recently been added; the lecture rooms and amphitheaters are also ample. The tuition is $150 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total number of students for 1901-2 was 724; graduates, 140. The net session opens Oct. 1, 1902, and closes May 29, 1903.

Hahnemann Medical College and Hospital.—Homeopathic. This was organized in 1848 and has a faculty of 15 professors and 42 lecturers, instructors, etc., in all 57. Hahnemann College Hospital and Pennsylvania Hospital furnish material for clinical work. The requirements for admission are those established by the Intercollegiate Committee of the American Institute of Homeopathy. The work covers four years of thirty weeks each. Fees: For each year, $125; matriculation, $5; graduation, $30. Total number of students for 1901-2 was 269; graduates, 58. The Dean is Dr. Pemberton Dudley, Philadelphia. The next session begins Sept. 30, 1902, and will end May 14, 1903.

Woman's Medical College of Pennsylvania.—This school was organized in 1850, and has a faculty of 11 professors, 19 clinical and assistant professors, and 23 lecturers, etc., in all 53. Clinical facilities are offered exclusively to this college by the Woman's Hospital, West Philadelphia Hospital for Women. Other clinical advantages offered are those of the Pennsylvania, German, Children's and Philadelphia hospitals, Wills Hospital for Diseases of the Eye and the Philadelphia Lying-in Charity. This school is a member of the Association of American Medical Colleges. The lecture-room and laboratory equipment is good. The curriculum covers four years of eight months each. Fees: First year, $141.50; second, $138.50; third, $135.50, and $100.50 for the fourth year. The Dean is Dr. Clara Marshall. Total enrolment for 1901-2 was 157; graduates, 28. The fifty-third session begins Sept. 24, 1902, and will end May 20, 1903.

Medico-Chirurgical College of Philadelphia.—This school was organized in 1881 and has a faculty made up of 16 professors, 13 emeritus, clinical and associate professors, and 45 lecturers, demonstrators, etc., 74 in all. Opportunities for clinical study are offered exclusively to students of this school by the Medico-Chirurgical Hospital, with 130 beds; Children's Hospital, containing 40 beds, and a maternity hospital having 40 beds. In common with other schools the following are used: Philadelphia, Pennsylvania, German, Samaritan, St. Joseph's, St. Agnes', St. Mary's, Methodist and the Philadelphia Lying-in hospitals. This school is a member of the Association of American Medical Colleges. With new laboratories, lecture rooms and fine clinical amphitheater this college is amply provided and the equipment is good. The work embraces four years of eight months each. Fees: $150 per annum. The Dean is Dr. Seneca Egbert, 4814 Springfield Ave. Total enrolment for 1901-2 was 447; graduates, 87. The next session opens Oct. 1, 1902, and will close May 23, 1903.

Temple College Department of Medicine.—This department was opened in 1901 and has a faculty of 27. Besides the hospitals of Philadelphia, open to all students, Samaritan Hospital supplies clinical material. The course is five years of nine months each and instruction is given at night. The fees are $125 per year, matriculation, $5, paid once. The Dean is W. W. Fritz. Enrolment, 1901-2, was 35. The next session begins Sept. 15, 1902, and ends June 9, 1903.

Pittsburg.

Western Pennsylvania Medical College.—This is the Medical Department of the Western University of Pennsylvania, and was organized in 1886. The faculty is composed of 29 professors, and 39 associates, assistants, etc., 68 in all. Clinical material for study is furnished by a college dispensary, and the Emma Kaufman Clinic, Reineman Maternity Hospital, Mercy, South Side and St. John's hospitals. This school is a member of the Association of American Medical Colleges. Well-equipped laboratories provide ample facilities for individual work; the lecture-room space is sufficient. The course of study embraces graded work for four years of eight months each. Special attention is given to practical bedside work. The total fees are $130 for each year. The Dean is Dr. J. C. Lange. Total enrolment for 1901-2 was 327; graduates, 57. The next session begins Oct. 1, 1902, and will close May 28, 1903.

SOUTH CAROLINA.

South Carolina, population 1,340,316, has one medical college.

Charleston.

The Medical College of the State of South Carolina.—This is situated in Charleston, a city of 55,807 people, and was founded in 1823. The faculty is made up of 10 professors and 11 assistants, etc., 21 in all. The clinical facilities are those offered by the City Hospital, where surgical, obstetrical and medical instruction is given. Applicants for matriculation must show by certificate or examination that they possess the education required of second-grade teachers in the public schools. The course covers four years of six months each. The total fees for each of the first two years are $100, and $75 each for the last two. Board and room can be obtained for from $12 to $16 a month. The Dean is Dr. Francis L. Parker. Total enrolment for 1901-2 was 89; graduates, 4. The next session opens Oct. 1, 1902, and closes April, 1903.

TENNESSEE.

Tennessee, population 2,020,616, has ten medical colleges. Of these the Medical Department of the University of Nashville, Vanderbilt University Medical Department, University of Tennessee Medical Department, and Meharry Medical College are situated in Nashville, a city with a population of 80,865. The City Hospital, containing 100 beds, is used by all the schools in common for clinical study. Board and lodging cost from $3 to $4 a week. Knoxville, population 32,637, contains two colleges, Tennessee Medical College and Knoxville Medical College. The cost of room and board in that city is from $2.50 to $4 a week. Chattanooga Medical College and Chattanooga National Medical College are situated in Chattanooga, a city of 30,154 people. Board and lodging cost there from $1.50 a week upwards. There is one college, Memphis Hospital Medical College, located in the growing city of Memphis, population 102,320. Good board can be obtained for from $3 to $4 a week. The other school, the Sewanee Medical College, is located at Sewanee, a mountain town of 1200 people.

Nashville.

Medical Department University of Nashville.—This school, established in 1850, has a faculty of 14 professors and 13 lecturers, assistants, etc., in all 27. This school is a member of the Southern Medical College Association. The course of study covers four years of twenty-six weeks each. The total fees for each of the four years are $65. The Dean is Dr. William G. Ewing. Total enrolment for 1901-2 was 257; graduates, 34. The next session begins Oct. 1, 1902, anu ends April 2, 1903.

Vanderbilt University Medical Department.—This school was founded in 1874, and in 1895, when the present medical building was completed, the course was extended, the standard raised, and the present faculty, consisting of 15 professors and 20 associates, lecturers, etc., appointed. The school is a member of the Southern Medical College Association. The course covers four years of six months each. The total fees for the first three years are $105 each, and $130 for the fourth year. The Dean is Dr. William L. Dudley, Nashville. Total enrolment for 1901-2 was 160; graduates, 16. The next session begins Oct. 1, 1902, and ends April 3, 1903.

University of Tennessee Medical Department.—This was organized in 1876 as the Nashville Medical College; its present relations were assumed in 1879. The faculty is composed of 14 professors and 13 lecturers, assistants, etc., 27 in all. The school is a member of the Southern Medical College Association. The course of study includes work for four years of six months each. The total fees for each of the first three years are $90, and $65 for the fourth year. The Dean is Dr. Paul F. Eve, 614 Broad St. Total enrolment for 1901-2 was 162; graduates, 18. The next session begins Oct. 1, 1902, and ends April, 1903.

Meharry Medical College of Walden University.—Colored. This school was organized in 1876 as the Medical Department of Central Tennessee College, now Walden University, "for the purpose of furnishing to the colored people of the South an opportunity of obtaining a medical education." The faculty is made up of 9 professors and 11 instructors, demonstrators, etc., 20 in all. This school is a member of the Association of American Medical Colleges. The work embraces a four-year graded course, six months to the year. The total fees for the first three years are $40 each. and $50 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1901-2 was 233; graduates, 55. The twenty-seventh session begins Sept. 3, 1902.

Knoxville.

Tennessee Medical College.—This school was organized in 1889, and has a faculty of 13 professors and 6 assistants, 19 in all. City General Hospital and a free dispensary supply material for a study of clinical cases. This school is a member of the Southern Medical College Association. The curriculum includes graded work for four years of six months each. Fees: First year. $75; second, $70; third, $67.50, and $94 for the fourth year. The Secretary is Dr. Henry J. Kelso. Total number of students for 1901-2 was 49; graduates, 23. The fourteenth session begins Oct. 1, 1902, and closes April 1, 1903.

Knoxville Medical College.—Colored. This school was established in 1900, following the discontinuance of the Medical Department of Knoxville College, organized in 1895. The teaching force comprises 11 professors. The City Hospital and a college dispensary supply clinical material. Applicants for admission not possessing a certificate of the necessary educational requirements "must pass a satisfactory examination." The course covers four years of six months each. Fees: First year, $42; second, $37 third, $30, and $40 for the fourth year. The Dean is Dr. E. L Randall. Total number of students for 1901-2 was 37; graduates, 3. The next session opens Dec. 1, 1902, and closes May 26, 1903.

Chattanooga.

Chattanooga Medical College.—This is the Medical Department of Grant University and was organized in 1889. The faculty is made up of 10 professors, and 22 demonstrators, instructors. etc., 32 in all. Clinical facilities are supplied by the wards of Erlanger Hospital, County Poor Asylum, free public dispensary of the college, and the City Physician's Office, which is maintained in the college building. The requirements for entrance are those of the Southern Medical College Association. The facilities have been increased by the completion of another four-story building at a cost of over $25,000, in which much new equipment has been installed. The course of work covers four years of six months each and is graded. The total fees for the first, third and fourth years are $75 each, and $85 for the second year. The Dean is Dr. E. A. Cobleigh. Total enrolment for 1901-2 was 252; graduates, 41 The fourteenth session begins Oct. 8, 1902, and ends April 13, 1903.

Chattanooga National Medical College.—Colored. This was organized in 1898. It has a teaching force of 18. The course covers four years of seven months each. The total fees are $50 each year with an additional graduation fee of $20. Total enrolment for 1901-2 was 26; graduates, 7. The Dean is Dr. T. W. Haigler 602 E. 8th St. The present session began Sept. 2, 1902, and ends March 28, 1903.

Memphis.

Memphis Hospital Medical College.—This school, organized in 1878, has a faculty of 10 professors and 18 assistants, beside quiz masters. Excellent clinical facilities are furnished by the City Hospital, Presbyterian Hospital, St. Joseph's Hospital and the East End Dispensary, the latter being located in the college building. The course includes graded work for four years of six months each. The total fees for the first three years are $75; for the fourth, $105. The Dean is Dr. W. B. Rogers. Total registration for 1901-2 was 687; graduates, 171. The twenty-third annual session will begin Nov. 1, 1902, and close April, 1903.

Sewanee.

Sewanee Medical College.—This is a three-year school, the Medical Department of the University of the South. It was organized in 1891 and has a faculty of 22. The college is a member of the Southern Medical College Association. The course has been three years of six months each, but beginning with 1902 four years will be required. The fees are $65 for each of the first two years, $55 for the third and $75 for the last year. The Dean is Dr. John S. Cain. Total enrolment for 1901-2 was 227; graduates 81. The eleventh session commenced May 1, 1902, and will close the last of January, 1903.

TEXAS.

Texas, population 3,048,710, has four medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants. Good board and room can be procured for from $15 to $20 a month. The Medical Department of Fort Worth University is at Fort Worth, population 26,888. The cost of board and room in that city is from $12 to $15 a month. The other two colleges, University of Dallas Medical Department and Dallas Medical College, are situated in Dallas, population 42,638.

Galveston.

University of Texas Medical Department.—This department of the State University was organized in 1891 and has a faculty of 22. The John Sealy Hospital, also having an outdoor department, and St. Mary's Infirmary supply good material for clinical study. *The requirements for admission* are proof, either by certificate or examination, that the candidate is sufficiently proficient i English, *including* grammar, composition and rhetoric; mathematics through *plane geometry and* algebra including quadratics, and general history. The curriculum embraces graded work for four years of eight months each. Fees, *to residents of the state*: First year, $50; second and third *each $20*, and $5 for the fourth. Non-residents of the state are required to pay an additional fee of $50 each year. The Dean is Dr. Henry P. Cooke. Total registration for 1901-2 was 167; graduates, 13. The twelfth session begins Oct. 1, 1902, and ends May 30, 1903.

Fort Worth.

Medical Department of Fort Worth University.—This school was organized in 1894, and has a *faculty of 17 professors*, and 14 lecturers, assistants, etc., in all 31. Clinical facilities are supplied by St. Joseph's Hospital, with 200 beds; the Benevolent Home, containing 75 beds; the Delia Collins' Rescue Home, having 50 beds, and *a college dispensary*. The school is a member of the Southern Medical College Association. Instruction is carried on by laboratory, didactic and clinical study. The course covers four years of six months each. The total fees for each of the first three years are $75, and $100 *for the fourth.* year. The Dean is Dr. Bacon Saunders. The total enrolment for 1901-2 was 141; graduates, 17. The next session opens Oct. 1, 1902, and closes April 7, 1903.

Dallas.

University of Dallas Medical Department.—This school has completed its second year. *The faculty* numbers 27. Parkland Hospital, with 90 beds; St. Paul's Sanitarium, Good Samaritan, and Policlinic Infirmary and a college dispensary and hospital are utilized for clinical study. The course *covers four years* of six months each. The school is a member of the Association of Southern Medical Colleges. The fees *are $75 for each of the four* years, with a matriculation fee of $5, paid once, and a graduation fee of $25. The Dean is Dr. E. H. Cary. *Total registration* for 1901-2 was 98; graduates, 9. The third session opens Oct. 1, 1902, and closes April 1, 1903.

Dallas Medical College.—This school became the Medical Department of Trinity University in 1901 and has completed two sessions. It began as a three-year school but now requires four years *of six months each.* It has a faculty of 30 professors and 13 adjuncts and assistants. The Parkland Hospital with 90 beds; St. Paul Sanitarium, with 150 beds; *The Medical College* Hospital and College Dispensary *supply clinical material.* The requirements for admission are those of the Association of American Medical Colleges. Fees are $75 each year; *matriculation fee,* $5, payable but once; graduation fee. $25. The Dean is Dr. Hugh L. McNew. Total enrolment, 1901-2, was 91; graduates, 10. The third session begins Oct. 1, 1902, and ends April 1, 1903.

Physio-Medical College of Texas.—This new school has a *faculty of 26. The requirements for admission* are a diploma or its equal or an examination in English *grammar, arithmetic, elementary* physics, United States history, geography and Latin. The course is four years of twenty-six weeks each. The fees are, first year, $70; fourth year, $85; other years, $65. Enrolment, 1901-2, 20; graduates, 3. The next session opens Oct. 14, 1902, and closes April 16, 1903. The Secretary is Dr. R. L. Spann.

VERMONT.

Vermont, population *343,641*, has one medical school.

Burlington.

Medical Department, University of Vermont.—This school is located at Burlington, a town of 18,640 people; it was organized in 1822, but suspended from 1836 until 1854, when it was reorganized. The faculty consists of 20 professors, and 14 adjuncts, instructors, etc., in all 39. The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction. Applicants for admission must show by certificate or examination sufficient knowledge of the following: English, including grammar, orthography and composition; geography, United States history, arithmetic and elementary physics. The laboratory and lecture-room space and equipment are good. The course of study embraces graded work for four years of six months each. The total fees for each of the first three years are $115, and $140 for the fourth year. Board and room costs from $3.50 to $5 a week. The Secretary is Dr. B. J. Andrews. Total registration of students for 1901-2 was 210; graduates, 32. The fiftieth session begins Jan. 2, 1903, and ends June 26, 1903.

VIRGINIA.

Virginia, population 1,854,184, has three medical colleges. The University of Virginia Department of Medicine is situated in Charlotteville (population 6449). Board and room can be obtained for $18 a month and upward. The other two colleges, Medical College of Virginia and University College of Medicine, are located at Richmond (population 85,050). The clinical facilities are good. Board and room can be obtained for from $12 to $20 a month.

Charlotteville.

University of Virginia Medical Department.—This school was organized in 1825, and has a faculty of 27. A free dispensary and the new four-story hospital furnish clinical facilities. The requirements for admission are those of the Association of American Medical Colleges. The course is four years of nine months each. Fees: First year, $110; second, $100; third, $80, and $60 for the fourth year. Total enrolment for 1901-2 was 211; graduates, 53. The seventy-ninth session opens Sept. 15, 1902, and closes June 17, 1903.

Richmond.

Medical College of Virginia.—This school was organized in 1838 as the Medical Department of Hampden Sidney College, and in 1854 the present name was assumed. The faculty is made up of 15 professors, and 21 lecturers, instructors, etc., a total of 36. Clinical material is furnished by the Old Dominion Hospital, Maternity Hospital, and the City Free Dispensary; an outside obstetric department also furnishes opportunities for clinical work. The magnificent new Memorial Hospital, which will be completed at about the opening of the session of 1902-3, will be under the exclusive control of this college for clinical purposes. The State Penitentiary, City Almshouse, and other public charities and asylums of the city, also afford opportunities for clinical work. This school is a member of the Southern Medical College Association. The buildings are large and contain well-equipped laboratories and amphitheaters. The course embraces four years of seven months each. The fees are $65 for each year, with an additional graduation fee of $30. The Dean is Dr. Christopher Tompkins. Total registration for 1901-2 was 212; graduates, 13. The next session begins Sept. 30, 1902, and will end May 12, 1903.

University College of Medicine.—This school was organized in 1893 and has a faculty of 18 professors, 34 lecturers, assistants, etc., a total of 52. Good clinical facilities are furnished by Virginia Hospital, with a maternity department and annex which was built especially for the purpose of affording clinical instruction; Richmond Eye, Ear and Throat Infirmary, containing 34 beds; the City Hospital, and a college dispensary. Applicants for matriculation must show by certificate or examination to be possessed of a certain proficiency in English, mathematics and Latin. The laboratory and lecture-room space and equipment are ample, but the school lays especial importance on the careful instruction and guidance of each student. The curriculum covers four years of seven and one-half months each. The total fees are $85 for each year. The Dean is Dr. J. Allison Hodges, Richmond. Total enrolment for 1901-2 was 194; graduates, 8. The next session begins Sept. 30, 1902, and ends May 14, 1903.

WISCONSIN.

Wisconsin, population 2,069,042, has two medical colleges, the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons. They are both situated in Milwaukee, a city of 285,315 people. Clinical facilities are furnished them in common by the County Hospital, with 175 beds, and the Milwaukee Hospital for the Insane. Board and lodging can be had for from $3 to $5 a week.

Milwaukee.

Milwaukee Medical College.—This school was organized in 1893, and has a faculty of 22 professors, 7 associates, and 28 lecturers, instructors, etc., a total of 57. Good clinical material is furnished by Trinity, St. Mary's, and the County hospitals, Milwaukee Hospital for the Insane, and a college dispensary. This school is a member of the Association of American Medical Colleges. Ample laboratory and amphitheater facilities are afforded. The course covers four years of seven months each. The total fees are $120 each for the first three years, and $130 for the fourth year. The President is Dr. William H. Earles. Total number of students for 1901-2 was 184; graduates, 28. The ninth session begins Oct. 1, 1902, and will close May 4, 1903.

Wisconsin College of Physicians and Surgeons.—This college was organized in 1893, and has a faculty composed of 28 professors, and 23 associates, assistants, etc., a total of 51. St. Joseph's Hospital, containing 150 beds; Wisconsin Maternity Hospital, a college dispensary and the material used in common with the other school supply ample facilities for clinical study. The school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are well equipped. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, $5; general ticket $100; for the use of microscope, a fee of $2 is charged for each course. The Secretary is Dr. W. H. Washburn. Total enrolment for 1901-2 was 125; graduates, 19. The next session begins Sept. 30, 1902, and ends May 28, 1903.

OKLAHOMA.

Oklahoma, population 398,331, may have one medical college in the immediate future. A charter has been obtained, a partial faculty of 18 selected and plans laid to open Oct. 1, 1902. The name will be the Oklahoma City Medical College and it will be controlled by the rules of the Association of American Medical Colleges. The session will close April 1, 1903. The city of Oklahoma has a population of 10,037 and contains two hospitals, aggregating 100 beds.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission to be maintained by colleges belonging to this Association are as follows:

Section 1.—Each college holding membership in this Association shall require of each student, *before admission* to its course of study [illegible]um of which shall be as follows:

1. [illegible] some subject of general interest. This [illegible] by the student at the time of the examination, and should contain at least 200 words. It should be criticised in relation to thought, construction, punctuation, spelling, and handwriting.

2. In *Arithmetic*, such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, and ratio and proportion.

3. In *Algebra*, such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

4. In *Physics*, such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

5. In *Latin*, an examination on such elementary work as the student may offer, showing a familiarity usually attained by one year of study; for example, the reading of the first 15 chapters of Cæsar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

Sec. 2.—In place of this examination, or any part of it, colleges, members of this Association, are at liberty to recognize the official *certificates of reputable* literary and scientific colleges, academies, high schools, and normal schools, and also the medical student's certificate issued by any state examining board covering the work of the foregoing entrance examination.

Sec. 3.—Colleges, members of this Association, may allow students *who fail in one or more branches* in this entrance examination the privilege of entering the first-year course, but such students shall not be allowed to begin the second course until the entrance *requirements are satisfied.*

Sec. 4.—Colleges, members of this Association, are free to honor official *credentials issued by medical colleges of equal requirements,* except in the branches of study embraced in the last year of their own curriculum.

Sec. 5.—Candidates for the degree of Doctor of Medicine in the year 1899 and thereafter shall have attended at least *four courses* of medical instruction, each course of at least six months' duration, no two courses of which shall have been in the same calendar year.

Sec. 6.—Colleges, members of this Association, are free to give to students who have met the entrance requirements of the Association additional *credit for time* on the four years' course as follows: (*a*) To students having the A.B., B.S., or equivalent *degree* from reputable literary colleges, one year of time; (*b*) To graduates and students of colleges, of *homeopathic or eclectic* medicine, as many years as they attended those colleges, provided they have met the previous requirements of the Association and that they pass an examination in materia medica and therapeutics; (*c*) To graduates of reputable colleges of *dentistry, pharmacy,* and *veterinary* medicine, one year of time.

Sec. 7.—A college not giving the whole four courses of the medical curriculum, and not graduating students, but otherwise eligible, may be admitted to membership.

Further information may be had of the Secretary, Dr. W. S. Hall, Berwyn, Chicago.

THE SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The following extracts from the Constitution show a portion of the regulations controlling matriculants:

Art. IV. Sec. 3. He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate from some legally constituted high school, general superintendent of state education, or superintendent of some county board of public education, attesting that he has been regularly examined and is possessed of at least the educational attainments required of first grade teachers of public schools or a certificate that he has passed the entrance examination to a university; and a student may be given one month, from the date of his admission, to submit his certificate of qualification.

A candidate for graduation, among other provisions, "must have attended, in a regular and reputable medical college, four full courses of lectures, of not less than six months (26 weeks) each, in four separate years, which is construed to mean, that no two courses shall either commence or close in the same calendar year—that is, between the 1st of January and the ensuing 31st of December." (Art. VI, Sec. 2.)

The Secretary is Dr. G. C. Savage, Nashville, Tenn.

AMERICAN INSTITUTE OF HOMEOPATHY.

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

1. English Composition. Exercise on assigned theme, not less than 200 words. Exercise in reading. Exercise in correction of ungrammatical sentences.

2. Mathematics. Arithmetical exercises in (a) vulgar fractions; (b) decimals; (c) percentage; (d) proportion; (e) square and cube root; (f) weights and measures; (g) decimal system. Mensuration. (a) Definition of terms; (b) exercises under the more fundamental rules.

3. Geography (general facts about North America).

4. History. General, with particular reference to human progress in art, science and letters. (The examination to avoid exact dates and minor details.)

5. Latin Language. (a) Grammar; (b) four books of Cæsar, or its equivalent.

The colleges recognized as in good standing by this organization are: [illegible] College of the Pacific; Denver Homeopathi[illegible]ahnemann Medical College, Chicago; Chicago [illegible] College; Hering Medical College; Homeopathic Medical Department of the State University of Iowa; Southwestern Homeopathic College; Kansas City Hahnemann Medical College; Southern Homeopathic Medical College; Boston University School of Medicine; Homeopathic Medical College of University of Michigan; College of Homeopathic Medicine and Surgery of University of Minnesota; Homeopathic Medical College of Missouri; New York Homeopathic Medical College; New York Medical College; Cleveland Homeopathic Medical College; Pulte Medical College; Hahnemann Medical College of Philadelphia.

CANADA.

The Dominion of Canada, with a population of 5,335,055, distributed through seven provinces and the Northwest territories, an area which reaches from the Atlantic to the Pacific, contains only 12 medical colleges. Of these, 5 are situated in Ontario, 4 in the province of Quebec, 2 in Nova Scotia, and one in Manitoba. One of the five colleges in Ontario is merely a teaching body; it does not confer degrees, since it is not in

Name of College.	Population of city in which coll. is located.	No. students registered, Session 1901-2.	Graduates, 1902.	Total No. teachers.	No. of weeks in college year.	Total graduates all colleges in state, 1902.	Total students all colleges in state, 1901-2.	Population of state.	No. of physicians in state.	No. of population to one physician.
ALABAMA	....	....	....	....	....	21	218	1,828,697	2200	832
Birmingham Medical College.—R	38,415	82	8	20	24					
Medical College of Alabama.—R	38,469	136	13	26	24					
ARKANSAS	....	....	....	....	....	11	220	1,311,564	2500	525
Medical Department Arkansas University.—R	54,587	220	11	23	26					
CALIFORNIA	....	....	....	....	....	118	895	1,485,053	3800	391
California Medical College.—E	342,782	84	6	28	32					
College of Physicians and Surgeons, San Francisco.—R	"	180	41	47	32					
Cooper Medical College.—R	"	214	25	35	32					
Hahnemann Hospital College of San Francisco.—H	"	45	8	38	28					
University of California, Medical Department.—R	"	151	24	64	32					
West Coast Medical College.—R	"	119								
College of Medicine, University of Southern California.—R	102,479	102	14	34	32					
COLORADO	....	....	....	....	....	58	230	539,700	1400	358
Colorado School of Medicine.—R	6,150	63	13	25	36					
Denver Homeopathic College.—H	133,859	34	10	32	28					
Denver and Gross College of Medicine.—R	"	133	35	91	32					
CONNECTICUT	....	....	....	....	....	20	145	908,420	1400	649
Yale University, Medical Department.—R	115,000	145	20	51	32					
DISTRICT OF COLUMBIA	....	....	....	....	....	75	569	278,718	1000	278
Howard University, Medical Department	278,718	145	27	25	28					
Medical Department, Columbian University.—R	"	257	26	52	32					
National University Medical Department.—R	"	37	9	37	32					
University of Georgetown School of Medicine.—R	"	130	13	55	32					
GEORGIA	....	....	....	....	....	179	436	2,216,331	3300	672
Atlanta College of Physicians and Surgeons.—R	89,872	257	111	28	24					
Georgia College of Eclectic Medicine and Surgery.—E	"	58	21	12	24					
Medical College of Georgia.—R	39,441	121	47	20	24					
ILLINOIS	....	....	....	....	....	575	3491	4,821,550	8800	548
American Medical Missionary College.—R	1,698,575	92	24	25	36					
Bennett College of Eclectic Medicine and Surgery.—E	"	104	21	39	26					
Chicago Homeopathic Medical College.—H	"	130	35	68	30					
College of Medicine and Surgery.—Ph.M	"	40	9	31	28					
College of Physicians and Surgeons, Chicago.—R	"	692	220	115	32					
Dunham Medical College.—H	"	82	19	31	28					
Hahnemann Medical College and Hospital.—H	"	185	49	52	28					
Harvey Medical College.—R	"	307	28	63	40					
Hering Medical College.—H	"	72	13	39	28					
Illinois Medical College.—R	"	228	21	43	24					
Jenner Medical College.—R	"	105	18	35	44					
Northwestern University Medical School.—R	"	465	96	93	36					
Rush Medical College.—R	"	803	211	194	36					
National Medical University	"	150	11	54	36					
American College of Medicine and Surgery	"	36	....	50	32					
INDIANA	....	....	....	....	....	96	483	2,516,462	5100	493
Central College of Physicians and Surgeons.—R	169,164	70	8	73	24					
Medical College of Indiana.—R	"	311	75	64	28					
Physio-Medical College of Indiana.—Ph.M	"	31	4	29	26					
Eclectic Medical College of Indiana.—E	"	25	....	31	24					
Fort Wayne College of Medicine.—R	45,115	46	9	33	28					
IOWA	....	....	....	....	....	119	681	2,231,853	4100	544
Keokuk Medical College of Physicians and Surgeons.—R	14,641	247	52	18	28					
Iowa College of Physicians and Surgeons.—R	62,139	64	10	23	36					
Sioux City College of Medicine.—R	33,111	63	10	15	32					
State University of Iowa, Homeopathic Medical Dept.—H	7,987	59	7	19	36					
State University of Iowa, Medical Department.—R	"	248	40	38	36					
KANSAS	....	....	....	....	....	43	172	1,470,495	2700	545
College of Physicians and Surgeons of Kansas City.—R	55,000	73	27	37	28					
Kansas Medical College.—R	33,608	99	16	33	26					
KENTUCKY	....	....	....	....	....	199	1383	2,147,174	4000	537
Hospital College of Medicine.—R	204,731	408	65	41	24					
Kentucky School of Medicine.—R	"	295	45	38	26					
Louisville Medical College.—R	"	219	29	23	24					
Louisville National Medical College.—R	"	....	7	15	28					
Southwestern Homeopathic Medical College.—H	"	27	4	31	28					
Medical Department, University of Louisville.—R	"	180	31	37	24					
Kentucky University, Medical Department.—R	"	238	18	33	26					
Medical Department, State University.—R	"	16	....	12	24					
LOUISIANA	....	....	....	....	....	57	408	1,381,625	1500	921
New Orleans University, Medical Department.—R	287,104	47	4	11	20					
Tulane University, Medical Department.—R	"	361	53	40	24					
MAINE	....	....	....	....	....	4	90	694,466	1300	534
Medical School of Maine, Bowdoin College.—R	5,210	90	4	18	26					
MARYLAND	....	....	....	....	....	433	1683	1,188,044	2200	504
Baltimore Medical College.—R	508,957	532	93	52	28					
Baltimore University School of Medicine.—R	"	63	31	28	24					
College of Physicians and Surgeons of Baltimore.—R	"	305	58	50	28					
Medical Department, Johns Hopkins University.—R	"	229	123	69	34					
Southern Homeopathic Medical College.—H	"	35	9	34	28					
University of Maryland, School of Medicine.—R	"	366	76	59	28					
Woman's Medical College of Baltimore.—R	"	25	4	27	32					
Maryland Medical College.—R	"	128	39	28	32					
MASSACHUSETTTS	....	....	....	....	....	234	1087	2,805,346	6300	445
Boston University School of Medicine.—H	560,892	125	23	32	58					
College of Physicians and Surgeons.—R	"	131	9	36	32					
Harvard University Medical School.—R	"	496	167	36	36					
Tufts' College Medical School.—R	"	335	35	53	32					
MICHIGAN	....	....	....	....	....	247	1098	2,420,982	4600	526
Detroit College of Medicine.—R	285,704	242	48	95	28					
Detroit Homeopathic Medical College.—H	"	45	6	37	28					
Michigan College of Medicine and Surgery.—R	"	75	13	30	28					
Grand Rapids Medical College.—R	87,565	73	47	31	24					
Saginaw Valley Medical College.—R	42,345	100	41	30	28					
University of Michigan Dept. of Medicine and Surgery.—R	14,509	508	84	67	36					
University of Michigan Homeopathic Medical College.—H	"	55	8	11	36					
MINNESOTA	....	....	....	....	....	98	522	1,751,394	1850	947
College of Homeopathic Med. and Surg., Univ. of Minn.—H	202,718	21	3	29	34					
College of Medicine and Surgery, Univ. of *Minnesota*.—R	"	362	61	81	36					
Medical Department of Hamline University.—R	"	139	34	47	36					

Name of College.	Population of city in which coll. is located.	No. students registered. Session 1901-2.	Graduates, 1902.	Total No. teachers.	No. of weeks in college year.	Total graduates all colleges in state, 1902.	Total students all colleges in state, 1901-2.	Population of state.	No. of physicians in state.	No. of population to one physician.
MISSOURI	......	....	....	....	....	366	2459	3,106,665	6300	493
Medico-Chirurgical College.—R	163,752	87	13	41	24					
Woman's Medical College.—R	"	16	6	42	28					
University Medical College of Kansas City.—R	"	225	27	46	24					
Kansas City Hahnemann Medical College.—H	"	72	10	32	28					
Kansas City Medical College.—R	"	111	21	45	28					
Eclectic Medical University.—E	"	49	12	20	24					
Central Medical College.—R	102,979	82	11	30	24					
Ensworth Medical College.—R	"	80	14	31	24					
Barnes' Medical College.—R	575,238	501	78	44	28					
Marion-Sims-Beaumont College of Medicine.—R	"	488	55	76	28					
St. Louis College of Physicians and Surgeons.—R	"	280	50	44	28					
American Medical College.—E	"	69	14	33	28					
Homeopathic Medical College of Missouri.—H	"	67	12	31	28					
Medical Department, Washington University.—R	"	242	43	60	30					
University of the State of Missouri.—R	5,651	90	....	30	36					
NEBRASKA	......	....	....	....	....	96	402	1,066,300	1500	711
University of Nebraska College of Medicine	102,555	153	38	46	32					
John A Creighton Medical College.—R	"	151	37	42	32					
Lincoln Medical College of Cotner University.—E	40,169	98	21	25	32					
NEW HAMPSHIRE	......	....	....	....	....	15	72	411,588	730	564
Dartmouth Medical College.—R	1,825	72	15	20	32					
NEW YORK	......	....	....	....	....	396	2507	7,268,894	12,300	591
Albany Medical College.—R	94,151	154	26	51	30					
College of Physici	3,437,202	778	145	109	32					
Cornell University	"	415	53	134	36					
Eclectic Medical	"	100	7	35	28					
Long Island College Hospital.—R	"	245	31	69	30					
New York Homeopathic Medical College and Hospital.—H	"	106	23	48	28					
New York Medical College and Hospital for Women.—H	"	36	6	44	26					
University and Bellevue Hospital Medical College.—R	"	319	48	113	32					
Syracuse University College of Medicine.—R	108,374	128	19	45	32					
University of Buffalo, Medical Department.—R	352,387	239	38	79	28					
NORTH CAROLINA	......	....	....	....	....	39	223	1,893,810	1600	1184
Leonard Medical School.—R	13,643	106	21	8	24					
North Carolina Medical College.—R	904	55	18	16	32					
Medical Department, University of North Carolina	13,643	62	....	25	32					
OHIO	......	....	....	....	....	325	1255	4,157,545	8650	481
Western Reserve University Medical College.—R	381,768	126	36	51	32					
Cleveland College of Physicians and Surgeons.—R	"	86	30	58	32					
Cleveland Homeopathic Medical College.—H	"	112	23	48	30					
Eclectic Medical Institute.—E	325,902	142	36	29	28					
Laura Memorial Woman's Medical College.—R	"	26	9	26	28					
Medical College of Ohio.—R	"	180	47	55	28					
Pulte Medical College.—H	"	40	10	38	28					
Miami Medical College.—R	"	97	31	50	28					
Ohio Medical University.—R	125,560	232	61	32	28					
Starling Medical College.—R	"	169	32	29	28					
Toledo Medical College.—R	131,822	52	10	39	28					
OREGON	......	....	....	....	....	25	107	413,536	900	460
University of Oregon Medical Department.—R	98,000	80	20	26	24					
Medical Department, Willamette University.—R	4,258	27	5	15	24					
PENNSYLVANIA	......	....	....	....	....	457	2501	6,302,115	9700	650
Temple College of Phila., Dept. of Medicine	1,293,697	35	....	27	36					
University of Pennsylvania Department of Medicine.—R	"	542	151	101	36					
Hahnemann Medical College and Hospital.—H	"	269	58	57	30					
Jefferson Medical College.—R	"	724	140	84	32					
Woman's Medical College of Pennsylvania.—R	"	157	28	53	32					
Medico Chirurgical College of Philadelphia.—R	"	447	23	74	32					
Western Pennsylvania Medical College.—R	321,616	327	57	68	32					
SOUTH CAROLINA	......	....	....	....	....	4	89	1,340,316	1200	1117
Medical College of the State of South Carolina.—R	55,807	89	4	21	24					
TENNESSEE	......	....	....	....	....	449	2120	2,020,616	3700	546
Tennessee Medical College.—R	32,637	79	23	19	24					
Knoxville Medical College.—R	"	37	3	11	24					
Medical Department of University of Nashville.—R	"	257	34	27	26					
Vanderbilt University Medical Department.—R	"	160	16	35	24					
University of Tennessee, Medical Department.—R	80,867	162	18	27	24					
Meharry Medical College.—R	"	233	55	20	24					
Memphis Hospital Medical College.—R	102,320	687	171	....	....					
Sewanee Medical College.—R	1,200	227	81	22	24					
Chattanooga National Medical College.—R	30,154	26	7	18	28					
Chattanooga Medical College.—R	"	252	41	32	24					
TEXAS	......	....	....	....	....	62	517	3,048,710	5200	586
Medical Department Fort Worth University.—R	26,688	141	17	31	24					
University of Texas Department of Medicine.—R	37,789	167	13	22	32					
University of Dallas Medical Department.—R	42,638	98	19	27	24					
Physio-Medical College of Texas	"	20	3	26	26					
Dallas Medical College.—R	"	91	10	43	24					
VERMONT	......	....	....	....	....	32	210	343,641	775	443
University of Vermont Medical Department.—R	18,640	210	32	39	24					
VIRGINIA	......	....	....	....	....	74	617	1,854,184	2225	833
Medical College of Virginia.—R	85,050	212	13	36	28					
University College of Medicine.—R	"	194	8	52	30					
University of Virginia Department of Medicine.—R	6,449	211	53	27	36					
WISCONSIN	......	....	....	....	....	47	309	2,069,042	2400	862
Milwaukee Medical College.—R	285,315	184	28	57	28					
Wisconsin College of Physicians and Surgeons.—R	"	125	19	51	32					

The following states and territories have no medical colleges: Arizona, population 122,931; Delaware, 184,735; Florida, 528,542; Idaho, 161,772; Indian Territory, 392,060; Mississippi, 1,551,270; Montana, 243,329; New Jersey, 1,883,669; New Mexico, 195,310; Nevada, 42,335; North Dakota, 319,146; Rhode Island, 428,556; South Dakota, 401,570; Utah, 276,749; Washington, 518,103; West Virginia, 958,800, and Wyoming, population, 92,531.

The accuracy of the statistics given of the enrolment and number of graduates of the colleges of the United States may be inferred from the fact that these were furnished by every college save one.

NAME OF COLLEGE.*	516 Alabama.	7 Arizona.	506 Arkansas.	534 California.	185 Colorado.	283 Connecticut.	59 Delaware.	146 Dist. of Col.	98 Florida.	448 Georgia.	19 Idaho.	2362 Illinois.	82 Indian Ter.	1203 Indiana.	798 Iowa.	567 Kansas.	903 Kentucky.	428 Louisiana.	231 Maine.	442 Maryland.
Coll. of Med., University of San Francisco, Cal	...	1	...	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Birmingham Medical College	77	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...
Medical College of Alabama	128	...	...	...	...	...	...	...	...	...	...	...	12	...	...	...	...	5	...	...
Medical Department Arkansas University	...	...	186	1	...	...	...	...	...	...	...	6	...	5	6	...	3	1	1	1
Coll. of Physicians and Surgeons, San Francisco	...	...	1	85	4	...	...	...	...	...	...	4	...	5	...	...	2	...	...	...
Cooper Medical College	...	...	...	172	...	...	...	...	...	...	1	2	...	...	1	1	...	...	...	...
Denver Homeopathic College	...	...	2	3	16	...	...	...	...	...	...	1	...	1	...	3	...	...	...	...
University of California, Medical Department	...	...	...	139	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colorado School of Medicine	...	...	...	...	39	...	...	...	...	...	...	3	...	...	2	...	...	...	...	1
Denver and Gross College of Medicine	...	...	...	...	77	2	...	...	...	...	...	2	...	3	5	2	1	...	...	1
Yale University Medical Department	...	...	...	...	...	110	1	...	...	...	...	1	...	...	...	2	...	...	2	1
Howard University Medical Department	3	...	2	1	...	...	1	28	3	13	...	1	...	2	1	3	3	1	...	5
Medical Department Columbian University	1	...	2	...	...	1	...	49	...	3	1	10	...	5	3	2	5	3	6	17
University of Georgetown Medical Department	1	...	...	1	1	3	1	45	1	1	...	2	...	...	...	1	1	1	...	11
Atlanta College of Physicians and Surgeons	33	...	...	...	...	...	...	...	16	155	...	...	1	...	...	...	1	4	...	...
Medical College of Georgia	2	...	...	...	...	...	...	...	...	86	...	2	...	...	...	...	...	...	...	...
Georgia College of Eclectic Medicine and Surgery	2	...	7	...	...	...	...	...	3	29	...	1	...	...	1	...	...	9	...	...
American Medical Missionary College	...	...	...	6	1	...	...	...	1	...	...	5	...	...	10	1	1	...	...	...
Bennett College of Eclectic Medicine and Surgery	...	...	1	...	...	...	...	...	...	...	...	50	...	10	6	...	...	...	...	...
Chicago Homeopathic Medical College	...	...	...	1	1	...	...	...	...	...	...	60	...	13	14	3	2	...	...	1
College of Medicine and Surgery	...	...	...	2	...	...	...	...	...	...	...	25	...	...	...	...	...	...	...	...
Harvey Medical College	...	...	...	...	...	...	...	...	...	...	...	300	...	1	2	...	...	...	...	...
College of Physicians and Surgeons of Chicago	...	1	3	6	1	...	...	...	1	...	1	337	...	29	91	13	1	2	...	...
Dunham Medical College	...	...	...	...	3	...	1	...	...	...	...	41	...	6	4	1	...	...	...	...
Jenner Medical College	...	...	...	...	...	...	...	...	...	...	...	105	...	...	...	...	...	...	...	...
Hahnemann Medical College and Hospital	...	...	1	1	...	1	...	1	...	...	...	79	...	6	30	6	...	...	2	...
Hering Medical College	...	...	...	...	...	...	...	...	...	...	...	23	...	4	4	6	...	...	...	...
Illinois Medical College	1	...	...	2	1	...	...	...	...	1	3	67	...	52	4	3	2	3	...	...
Northwestern University Medical School	...	...	...	3	3	...	...	...	...	...	...	219	...	17	61	18	1	...	...	1
Rush Medical College	2	...	1	3	5	...	...	1	...	1	3	345	...	60	75	22	2	...	...	1
Central College of Phys. and Surgeons of Indiana	...	...	...	...	...	...	...	...	...	...	...	1	...	56	1	...	1	...	...	...
Eclectic Medical College of Indiana	...	...	...	1	...	...	...	...	...	...	...	...	...	22	...	1	...	...	...	...
Medical College of Indiana	...	...	1	...	1	...	...	...	...	...	...	12	...	287	1	1	1	...	...	...
Physio-Medical College of Indiana	...	...	...	1	...	...	...	...	...	...	...	3	...	11	1	...	...	...	...	4
Fort Wayne College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	34	1	...	2	...	...	...
Keokuk Medical College of Physicians and Surgs.	...	...	...	...	2	...	...	...	...	...	...	69	...	2	115	5	...	...	...	...
Iowa College of Physicians and Surgeons	...	...	...	...	...	...	...	...	...	...	...	...	...	...	61	1	...	...	...	...
Sioux City College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
State University of Iowa Homeo. Med. Dept.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
State University of Iowa Medical Department	...	...	...	1	...	...	...	...	...	...	...	11	...	...	125	...	...	...	...	...
Coll. of Physicians and Surgeons of Kansas City	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	51	...	...	...	...
Kansas Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	87	...	1	...	...
School of Medicine of University of Kansas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	37	...	...	...	...
Hospital College of Medicine	6	...	4	...	...	1	...	...	...	1	...	13	...	53	1	4	239	1	...	...
Louisville Medical College	8	...	6	1	1	...	...	...	2	2	...	3	...	22	...	7	70	8	...	...
Kentucky School of Medicine	3	...	4	...	1	...	...	...	2	2	...	7	3	66	...	1	95	...	...	1
S. W. Homeopathic Medical College	1	...	...	...	...	...	...	...	...	...	...	2	...	7	1	...	14	...	...	...
Medical Department University of Louisville	...	...	3	...	1	...	...	...	...	...	...	4	...	34	...	...	97	...	...	...
Kentucky University Medical Department	4	...	3	...	...	1	...	...	1	3	...	1	1	25	...	6	116	4	...	...
New Orleans University Medical Department	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	26	...	...
Tulane University Medical Department	24	...	11	...	...	...	...	...	8	2	...	...	1	2	...	...	1	199	...	...
Medical School of Maine at Bowdoin College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	79	...
Baltimore Medical College	1	...	...	...	...	18	3	...	...	4	...	5	...	3	...	...	1	...	49	52
Baltimore University School of Medicine	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	23
College of Physicians and Surgeons, Baltimore	4	...	...	1	1	13	2	...	1	4	...	...	...	1	1	...	1	...	5	42
Medical Department Johns Hopkins University	5	...	...	11	1	10	...	4	1	6	...	9	...	5	3	2	7	1	9	39
Southern Homeopathic Medical College	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	21
University of Maryland School of Medicine	...	...	...	...	...	...	2	...	7	18	...	...	...	...	...	...	1	...	...	151
Women's Medical College of Baltimore	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	11
Maryland Medical College	7	...	...	...	1	2	2	...	...	...	...	...	...	...	...	...	2	...	5	15
Boston University School of Medicine	1	...	...	1	...	3	...	...	...	...	...	1	...	...	...	...	...	...	6	...
College of Physicians and Surgeons	...	...	...	...	...	4	...	1	...	1	...	...	...	...	...	...	...	...	3	1
Harvard University Medical School	...	...	...	3	...	5	...	...	...	...	...	3	...	2	2	...	...	...	25	...
Tufts College Medical School	...	...	...	...	...	4	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Detroit College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...
Saginaw Valley Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...
University of Michigan Dept. of Med. and Surg.	1	...	...	4	1	2	...	...	1	3	...	35	...	199	12	3	2	...	...	...
Grand Rapids Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...
University of Michigan Homeo. Med. Coll	...	...	...	...	...	...	...	...	...	...	...	3	...	6	...	...	...	...	1	...
Michigan College of Medicine and Surgery	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...
Detroit Homeopathic Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
College of Homeo. M. and S., Univ. of Minn	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Department of Hamline University	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
University of Minnesota College of M. and S.	...	...	...	1	...	...	...	...	...	...	...	...	...	...	14	...	...	...	1	...
Medico-Chirurgical College	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	22	...	...	...	...
Ensworth Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	7	...	...	...	...
Woman's Medical College	...	...	2	...	2	...	...	...	...	...	...	...	1	...	...	5	...	...	...	...
Central Medical College	...	...	...	...	...	...	...	...	...	...	1	...	2	...	4	10	...	...	...	...
Barnes Medical College	...	...	19	...	1	...	...	1	...	...	1	88	10	14	19	13	18	1	...	...
University Medical College of Kansas City	...	2	...	...	3	...	...	1	...	...	...	4	6	...	5	83	...	...	...	...
Kansas City Hahnemann Medical College	...	...	...	2	2	...	...	...	...	...	...	...	...	2	2	20	1	...	...	...
Marion-Sims-Beaumont College of Medicine	...	1	10	2	...	...	...	...	...	...	...	157	1	12	7	7	3	5	...	...
St. Louis College of Physicians and Surgeons	2	...	15	...	1	...	...	1	...	...	...	89	3	9	19	3	10	1	...	...
American Medical College	...	...	6	1	...	...	...	1	...	...	...	14	...	...	2	3	...	...	...	...
Kansas City Medical College	...	...	1	...	1	...	...	...	...	...	...	1	2	...	...	51	1	...	...	...
University of the State of Missouri	...	...	...	...	1	...	...	...	...	...	2	3	...	1	3	3	...	2	...	...
Medical Department Washington University	...	...	10	...	3	...	...	...	...	...	1	68	3	5	1	5	2	1	...	...
Eclectic Medical University	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	18	...	2	...	...
University of Nebraska College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
John A Creighton Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26	3	...	...	...	...
Dartmouth Medical School	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Union University Albany Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cornell University Medical College	3	...	...	...	...	6	...	...	...	1	...	1	...	2	4	...	...	1	1	...
Eclectic Medical College of New York	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
University of Buffalo Medical Department	1	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Long Island College Hospital	...	...	...	...	...	7	...	...	...	...	...	1	...	...	1	...	...	...	1	...
New York Homeopathic Medical Coll. and Hosp.	...	...	...	...	...	6	...	...	...	...	...	...	...	1	...	...	1	...	1	...
Syracuse University School of Medicine	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...

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*The total number of students from each state is given at the top of each column.

Massachusetts. 1245	Michigan. 812	Minnesota. 582	Mississippi. 516	Missouri. 1332	Montana. 40	Nebraska. 235	New Hampshire. 120	New Jersey. 492	New Mexico. 7	New York. 2306	Nevada. 7	North Carolina. 399	North Dakota. 69	Ohio. 1194	Oklahoma. 67	Oregon. 124	Pennsylvania. 1826	Rhode Island. 121	South Carolina. 170	South Dakota. 67	Tennessee. 607	Texas. 997	Utah. 44	Vermont. 88	Virginia. 657	Washington. 73	West Virginia. 280	Wisconsin. 670	Wyoming. 12	Foreign. 494	Total.
...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	82
...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	136
...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	...	...	...	...	...	...	...	1	220
1	1	1	...	1	...	3	...	2	...	12	2	...	...	12	...	2	2	1	...	1	1	2	3	1	1	...	...	...	...	32	180
...	...	...	...	6	...	...	...	...	1	5	...	...	...	5	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	9	102
...	...	...	...	1	1	...	...	...	...	...	3	...	...	1	...	11	2	...	...	...	...	1	1	...	...	9	...	1	...	6	214
1	...	...	...	...	...	4	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	34
...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	2	1	...	...	...	...	...	...	...	...	3	...	...	...	3	151
2	...	...	...	1	3	1	...	...	...	12	...	...	...	2	...	1	1	...	...	...	...	2	...	...	...	...	...	...	2	1	63
6	2	1	...	3	...	...	1	1	1	6	...	1	...	2	...	...	3	...	...	...	...	...	...	...	1	1	1	3	1	6	133
10	...	...	...	...	...	...	...	1	...	7	...	...	...	1	...	...	...	4	...	...	...	...	...	2	...	...	...	...	...	3	145
1	1	...	2	...	...	...	...	3	...	3	...	7	...	6	...	...	5	...	10	...	1	3	...	...	18	...	2	1	...	15	145
7	5	6	3	1	...	1	2	5	...	17	...	8	2	6	1	...	18	...	1	...	7	9	...	2	34	...	7	3	...	4	257
18	1	1	...	...	...	...	...	...	...	11	...	1	...	...	...	...	9	6	1	...	...	1	...	1	5	...	...	1	...	4	130
...	...	...	14	1	...	...	...	...	...	2	...	6	...	...	...	...	...	...	8	...	1	11	...	...	4	...	...	...	...	...	257
...	1	...	2	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	20	...	2	1	...	...	...	...	...	...	...	1	121
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	1	2	...	...	...	...	...	...	...	...	58
2	12	3	...	3	1	4	...	...	...	3	...	...	1	12	1	...	2	...	...	...	...	2	1	2	...	2	...	6	...	10	92
...	6	3	...	1	...	2	...	...	...	...	...	...	...	10	...	1	1	...	...	...	...	3	...	...	...	...	...	7	...	3	104
...	9	2	...	1	1	1	...	...	...	2	...	...	...	8	...	...	2	...	...	1	...	...	...	...	...	1	...	7	...	...	130
...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...	...	5	...	...	...	...	1	...	...	...	...	...	2	...	1	40
...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	307
1	25	26	2	9	...	6	...	...	...	2	...	...	3	25	...	5	5	...	1	7	1	3	2	...	1	2	...	68	...	12	692
1	2	...	...	2	...	...	...	...	...	7	...	...	...	4	...	...	4	...	...	...	...	1	...	...	...	...	...	2	...	3	82
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	105
1	8	3	...	4	1	4	1	3	...	3	...	...	...	6	...	...	4	...	...	1	...	...	2	1	...	1	...	13	...	2	185
...	6	6	...	2	...	4	...	...	...	2	...	...	...	2	...	...	3	...	...	2	...	...	...	...	...	...	...	3	...	5	72
1	4	5	5	6	...	1	...	1	...	4	...	1	1	13	...	...	12	1	1	1	1	15	2	...	...	2	4	8	...	...	228
1	12	11	1	4	3	17	...	...	...	5	...	...	1	4	1	...	3	1	...	10	...	2	...	1	...	6	...	53	1	6	465
4	14	26	...	16	3	19	1	...	...	4	...	...	3	22	...	3	8	...	...	7	...	3	9	1	1	6	1	121	2	8	803
...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	3	70
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
...	1	...	...	...	...	...	...	...	...	1	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	311
...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	1	...	2	...	...	...	...	1	...	...	1	31
...	...	...	1	...	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	46
1	...	9	...	25	...	2	...	...	...	...	...	...	1	2	...	...	3	...	...	4	...	1	...	...	...	...	...	4	...	2	247
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	64
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	63
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59
...	...	1	...	...	...	2	...	1	...	2	...	...	...	...	...	...	1	...	...	2	...	...	...	...	1	...	...	1	...	...	248
...	2	...	...	12	...	...	...	...	...	2	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	73
...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	99
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	38
1	1	1	9	10	2	...	...	...	...	1	...	...	...	9	...	...	3	1	1	...	12	20	...	...	7	...	7	...	...	...	408
1	...	...	25	1	1	...	...	...	...	...	...	5	...	3	4	...	2	...	...	...	1	32	...	...	2	1	8	1	...	2	219
1	1	3	6	9	1	...	...	...	...	4	...	1	1	10	...	...	5	...	1	2	8	26	...	...	8	1	13	5	...	4	295
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	27
...	...	...	2	3	...	...	...	...	...	5	...	1	...	5	...	...	1	...	...	...	4	12	...	...	...	...	7	...	...	1	180
...	1	...	10	13	1	1	...	...	...	2	...	4	...	1	1	...	1	...	2	...	6	10	...	...	3	...	14	...	...	3	238
...	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	...	...	...	...	...	...	...	...	47
...	...	...	40	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	2	...	2	54	...	...	1	...	...	...	...	2	361
7	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	90
104	...	...	...	2	...	1	13	41	...	25	...	8	2	11	...	...	85	9	8	...	1	2	...	25	7	...	31	...	...	21	532
5	...	...	...	...	...	...	1	6	...	7	...	...	...	1	...	...	4	2	2	...	...	...	...	2	3	...	5	...	...	...	63
25	...	...	...	...	...	...	1	21	...	27	...	9	...	13	...	1	48	16	6	...	...	2	9	...	8	...	28	...	...	16	305
8	2	2	...	4	3	...	2	7	...	19	...	4	2	10	...	...	18	1	...	1	1	3	...	1	10	...	4	11	...	3	229
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	1	...	1	...	...	1	35
9	...	2	...	...	...	1	3	4	...	12	...	50	...	2	...	...	14	3	26	...	...	1	...	...	29	...	17	...	...	14	366
...	...	1	1	...	...	...	...	1	...	2	...	...	...	...	...	...	4	...	...	...	...	...	...	...	2	...	1	...	...	1	25
10	...	...	4	1	...	...	3	6	...	5	...	1	...	1	...	...	8	...	3	...	2	3	...	...	14	...	30	...	...	3	128
82	2	...	...	...	...	1	4	1	...	3	...	...	...	1	...	1	2	3	...	...	...	...	...	2	1	...	...	...	...	10	125
80	1	...	...	...	...	...	4	2	...	12	...	...	...	...	...	...	2	8	...	...	...	...	...	5	2	...	...	...	...	5	131
397	...	...	...	1	...	1	16	...	...	7	...	...	1	3	...	...	2	17	...	...	...	1	...	3	...	1	...	...	...	6	496
273	1	9	...	...	...	...	17	...	...	2	...	...	...	...	...	...	...	11	1	...	...	...	1	5	...	...	...	...	...	9	335
1	158	1	...	...	...	...	...	1	...	7	...	...	4	8	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	56	242
1	74	...	...	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	19	100
4	268	3	...	3	...	4	1	1	...	40	...	1	9	34	...	1	20	1	1	...	4	1	2	3	2	4	...	9	1	8	508
...	61	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	6	73
...	27	1	...	...	3	...	...	...	...	6	...	...	...	3	...	...	3	...	...	...	...	...	...	1	...	...	...	...	...	1	55
...	46	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	15	75
...	27	...	...	...	...	...	...	...	...	2	...	...	...	8	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	5	45
...	...	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	21
...	...	114	...	...	1	...	...	...	...	...	...	...	12	...	...	...	...	...	...	3	...	...	...	...	...	...	...	6	...	1	139
1	1	295	...	...	...	1	...	...	...	...	...	...	17	...	...	1	...	...	...	8	...	...	...	...	...	2	...	18	...	2	362
...	...	...	...	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	87
...	...	...	1	55	...	6	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	80
...	...	...	...	5	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
...	...	...	...	53	1	5	...	...	...	1	...	...	...	...	4	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	82
1	2	4	3	233	...	1	...	...	3	2	...	...	1	7	8	...	2	...	1	2	4	27	2	...	2	...	6	1	...	4	501
...	...	...	...	99	...	5	...	...	...	1	...	...	...	3	5	...	1	...	...	...	...	2	...	...	1	...	1	...	1	2	225
...	...	...	...	29	...	2	...	...	...	2	...	1	...	1	4	...	...	...	...	3	...	...	...	...	...	...	...	1	...	...	72
1	...	2	8	224	1	3	...	...	...	...	...	...	3	1	3	1	3	...	1	1	1	13	3	...	...	4	...	3	1	6	488
...	...	...	...	90	1	1	...	...	...	4	...	1	...	8	5	1	2	...	...	...	2	8	...	...	1	...	1	1	...	1	280
...	...	...	...	33	...	1	...	...	...	...	...	...	...	...	1	1	1	...	...	1	1	3	...	...	...	...	...	...	...	...	69
...	...	2	...	35	1	2	...	...	...	...	...	...	...	1	6	...	...	...	...	...	...	...	...	...	...	6	...	...	...	1	111
1	...	...	1	56	1	1	...	...	...	3	...	...	...	1	2	...	5	...	...	1	...	...	...	...	...	...	...	2	...	1	90
1	...	...	...	130	...	1	...	...	...	...	...	...	1	3	1	...	...	...	...	...	...	3	...	...	1	1	...	1	...	...	242
...	...	...	...	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	49
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	153
...	...	3	...	...	...	114	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	151
19	...	1	...	...	...	...	32	...	...	3	...	...	...	1	...	...	1	2	...	...	...	...	...	9	...	...	...	...	...	...	72
7	...	...	...	...	...	...	...	1	...	141	...	...	...	...	...	...	2	...	...	...	...	...	...	3	...	...	...	...	...	...	154
8	1	...	...	1	...	...	...	28	...	344	...	...	...	...	...	1	4	3	...	...	...	...	1	...	1	...	...	...	...	4	415
...	...	...	...	...	...	...	...	9	...	89	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	100
...	...	1	...	...	...	...	...	1	...	216	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	1	...	7	239
3	...	...	...	...	...	...	2	10	...	210	...	2	...	...	...	...	...	1	...	...	...	...	...	3	...	...	...	...	...	4	245
4	...	...	...	...	1	...	...	20	...	67	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	...	...	2	106
1	...	...	...	...	...	...	1	...	...	118	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	2	128

NAME OF COLLEGE.	516 Alabama.	7 Arizona.	506 Arkansas.	534 California.	185 Colorado.	283 Connecticut.	59 Delaware.	146 Dist. of Col.	98 Florida.	448 Georgia.	19 Idaho.	2362 Illinois.	82 Indian Ter.	1203 Indiana.	798 Iowa.	567 Kansas.	903 Kentucky.	428 Louisiana.	231 Maine.	442 Maryland.
College of Physicians and Surgeons	4	...	2	3	2	34	1	1	3	8	...	3	...	4	2	...	5	...	4	...
New York Medical College and Hosp. for Women	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
University and Bellevue Hospital Medical College	1	...	...	...	...	9	...	...	2	6	...	2	...	1	3	...	2	...	...	2
Leonard Medical College	6	...	...	...	...	1	...	...	1	5	...	...	...	...	...	...	...	...	...	1
University of North Carolina Medical Department	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
North Carolina Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cleveland College of Physicians and Surgeons	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	...
Cleveland Homeopathic Medical College	...	...	...	...	...	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...
Eclectic Medical Institute	...	...	1	1	...	...	...	1	1	1	...	13	...	20	1	...	14	...	...	...
Laura Memorial Woman's Medical College	...	...	...	1	...	...	...	...	...	...	...	...	...	3	...	1	3	...	...	...
Medical College of Ohio	1	...	...	...	...	...	...	...	...	...	...	1	...	13	...	1	26	...	...	...
Medical Department Western Reserve University	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Miami Medical College	...	...	...	...	...	...	...	...	1	...	...	3	...	8	1	...	13	...	...	...
Ohio Medical University	...	...	...	...	...	...	...	...	1	...	...	2	...	1	...	1	3	...	...	...
Pulte Medical College	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	...	...	3
Starling Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toledo Medical College	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
University of Oregon Medical Department	...	...	...	3	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Willamette University Medical Department	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Department of Medicine University of Penn	4	...	...	4	1	7	8	4	2	1	...	10	...	6	6	2	4	1	11	12
Hahnemann Medical College and Hospital	1	...	...	1	1	8	6	1	...	...	...	2	...	1	...	1	...	...	1	6
Jefferson Medical College	2	...	1	3	3	9	11	...	1	6	2	7	...	10	9	3	1	1	12	6
Western Pennsylvania Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Woman's Medical College of Pennsylvania	...	...	...	...	...	4	2	2	...	...	...	...	...	1	1	3	2	1	1	2
Medico-Chirurgical College of Philadelphia	1	...	...	2	...	3	11	...	1	...	...	...	...	1	2	...	6	...	1	2
Medical College of the State of South Carolina	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chattanooga National Medical College	7	...	...	...	...	...	...	...	...	9	...	...	...	1	...	...	...	...	...	...
Medical Department University of Tennessee	12	...	2	...	...	...	...	...	...	3	...	2	3	...	...	...	22	6	...	...
Chattanooga Medical College	47	1	10	...	1	...	...	1	6	24	...	4	1	1	1	...	4	6	1	...
Meharry Medical College	17	...	18	...	...	1	...	...	15	15	...	5	2	1	...	3	20	8	...	...
Memphis Hospital Medical College	19	1	133	...	...	...	...	...	...	3	...	1	14	2	...	3	1	68	...	...
Medical Department University of the South	20	...	8	...	...	...	1	...	3	14	...	...	...	1	2	...	4	28	...	...
Tennessee Medical College	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	11	...	...	...
University of Nashville Medical Department	24	...	17	...	...	...	...	...	2	4	...	...	2	5	...	...	20	22	...	...
Vanderbilt University Medical Department	16	...	6	1	...	...	...	...	1	2	...	1	...	3	...	...	14	2	...	...
Knoxville Medical College	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	2	...	...	...
Medical Department Ft. Worth University	...	...	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...	...
Physio-Medical College of Texas	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Medical Department University of Texas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
University of Dallas Medical Department	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dallas Medical College	...	...	1	...	...	...	...	...	...	...	...	...	10	...	...	...	...	...	...	...
University of Vermont Medical Department	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
University College of Medicine	...	...	...	...	...	...	...	...	4	1	...	...	...	...	...	...	...	...	...	...
University of Virginia Medical Department	11	...	2	1	...	1	...	3	1	2	...	...	...	...	1	...	8	2	...	7
Medical College of Virginia	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...	1
Milwaukee Medical College	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...
Wisconsin College of Physicians and Surgeons	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...

affiliation with any university. The distinction between university and college in Canada is definite, namely, the latter is a teaching body only and has no right to grant a degree. Most of these colleges are mentioned below.

Toronto, Ontario.

UNIVERSITY OF TORONTO, MEDICAL FACULTY.—All the lectures and *demonstrations are given in the laboratories* and lecture rooms of the University; more than two-thirds of the instruction in the 3d and 4th years are given in the wards and in the pathological and *clinical laboratories.* A 5th year is now demanded by the Ontario Medical Council, for which provision will be made. Clinical instruction is given in the Toronto General Hospital. Mercer Eye and Ear Infirmary, Burnside Lying-in Hospital, Hospital for Sick Children, and St. Michael's Hospital. Before commencing students must satisfy, as to qualifications, the College of Physicians and Surgeons of Ontario (Provincial Board). Fees are: Registration (payable once), $5; each of the first four years, $100; fifth year, $50; for the degree of M.B., and M.D., each $20. Number of students registered last session, 405; graduates, 48. The sixteenth session, since the re-establishment of the Medical Faculty of the University, will commence October 1.

TRINITY MEDICAL COLLEGE.—This college is in affiliation with Trinity University, the University of Toronto, Queen's University, and the University of Manitoba. It is situated in Toronto. Toronto General Hospital, Hospital for Sick Children, St. *Michael's Hospital,* Burnside Lying-in Hospital, and the Eye and Ear Hospital are open to the students for clinical instruction. The entering candidate must pass the examination required by the Provincial College of Physicians and *Surgeons. The fee for each* session of eight months is $100, exclusive of fees for examinations and hospitals. Matriculates during last session were 147; graduates, 29. The thirty-second "consecutive winter session" will begin September 25, and continue for eight months.

ONTARIO MEDICAL COLLEGE FOR WOMEN.—This college is located Toronto, and is not empowered to grant degrees in Medicine, but it qualifies students fully to take the examinations in any university. The college requires no certificate of matriculation examination, but will accept that of the university selected by the student. The fee for each year is $100, exclusive of all hospital and university fees. The number of undergraduates, 1901-2, was 339; graduates, 52. The nineteenth session will open September 16 and continue for eight months.

London, Ontario.

MEDICAL DEPARTMENT OF THE WESTERN UNIVERSITY.—This college makes use of Victoria Hospital for its clinical work. The fee each year is $90, and $25 for graduation. The requirements for matriculation are those demanded by the College of Physicians and Surgeons of Ontario, and the full course is one of five years. The matriculates of last session were 84; graduates, 15. The twenty-first session opens Sept. 9, 1902, and ends May 7, 1903.

Montreal, Quebec.

UNIVERSITY OF BISHOP'S COLLEGE, FACULTY OF MEDICINE.—The course leading to the degree of C.M., M.D., extends over four years of nine months each. The annual fees are $100, which include all practical classes and material for the same. Students must, on en*tering the study of medicine,* pass the college matriculation examination, or if the license for the Province of Quebec is desired, that of the College of Physicians and Surgeons of that province. Special *facilities are offered for the practical teaching of obstetrics, and* undergraduates are obliged to take entire charge of several accouchments before being allowed to take the final examination. Other clinical facilities are offered in the Montreal General Hospital, the Royal Victoria Hospital, the Western Hospital, the Hotel Dieu, and the Women's Hospital. During the last session the students numbered 76; graduates, 7. The session for 1902-3 will open October 1.

MCGILL UNIVERSITY, FACULTY OF MEDICINE.—This college has a course of four years of nine months each. The total fees for the course are $500. Clinical instruction is given in the Montreal General Hospital, Royal Victoria Hospital, and Montreal Maternity Hospital. Students, except university graduates in arts, must pass the preliminary examination equivalent to that required by the Provincial College of Physicians and Surgeons. Last year's matriculates numbered 473; graduates, 96. The seventy-first session will *commence September* 23.

Quebec, P. Q.

UNIVERSITE LAVAL, FACULTE DE MEDECINE.—The course consists of four years. The fees for the entire course are $220 and $300, *according to preliminary qualifications. The matriculates during* last session were 97; graduates, 19.

Halifax, Nova Scotia.

FACULTY OF MEDICINE OF DALHOUSE UNIVERSITY.—The course consists of four years of eight months each, and leads to the final M.D. and C.M. examination. Prospective students must pass the preliminary examination of the Provincial Medical Board, a university examination or a recognized equivalent. During last session there were 88 students, of which 21 belonged to the graduating class.

NOTES.

In the Table indicating homes of students, those marked foreign include Canadians. This will explain the number in the "foreign" column, in certain colleges located near the

Massachusetts. 1245	Michigan. 812	Minnesota. 382	Mississippi. 516	Missouri. 1332	Montana. 40	Nebraska. 235	New Hampshire. 120	New Jersey. 492	New Mexico. 7	New York. 2306	Nevada. 7	North Carolina. 399	North Dakota. 69	Ohio. 1194	Oklahoma. 67	Oregon. 124	Pennsylvania. 1826	Rhode Island. 121	South Carolina. 170	South Dakota. 67	Tennessee 607	Texas. 997	Utah. 44	Vermont. 88	Virginia. 657	Washington. 73	West Virginia. 280	Wisconsin. 670	Wyoming. 12	Foreign. 494	Total.
32	3	...	...	2	2	1	2	108	...	476	1	4	...	11	...	1	13	13	1	...	1	5	...	5	2	...	1	4	1	13	778
2	...	...	...	...	...	...	...	5	...	23	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	32
12	...	...	1	...	...	...	4	42	...	101	...	2	...	8	...	1	9	4	1	...	...	2	4	2	1	1	...	...	...	6	319
2	...	...	1	...	...	...	...	2	...	3	...	28	...	...	...	...	6	1	15	...	...	1	...	...	28	...	1	...	...	4	106
...	...	...	1	...	...	...	...	...	...	...	...	58	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	62
1	...	...	...	...	...	...	...	...	...	...	...	50	...	...	...	...	...	...	3	...	...	...	...	...	1	...	...	...	...	...	55
...	...	...	...	...	...	...	...	...	...	3	...	...	...	68	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	2	86
...	2	...	...	...	...	...	...	...	...	12	...	...	...	65	...	...	25	1	...	...	...	...	...	...	...	...	1	...	...	2	112
...	1	...	...	3	...	1	...	...	...	4	...	...	...	53	1	...	14	...	...	...	...	2	...	...	...	...	10	...	...	...	142
...	...	...	...	...	...	...	...	...	...	1	...	...	...	14	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	1	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	133	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	2	180
1	1	...	...	...	...	...	...	1	...	1	...	...	...	111	...	...	6	...	...	...	...	...	...	...	...	...	...	1	...	2	126
...	...	...	...	...	...	...	...	...	...	...	...	...	...	69	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	97
1	3	...	...	...	...	...	...	...	...	5	...	...	...	187	...	...	21	...	...	...	...	...	...	...	...	...	4	...	...	3	232
1	...	...	...	...	...	...	...	...	...	2	...	...	...	25	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	40
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	2	...	...	...	...	...	...	...	...	...	...	...	...	46	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	52
...	1	...	...	...	...	...	...	...	...	2	...	...	1	...	...	59	...	...	...	...	...	...	...	...	...	9	...	...	...	4	80
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27
10	1	1	1	4	...	1	2	23	...	19	...	5	...	20	...	2	324	5	2	...	4	3	...	1	4	4	6	5	...	12	542
3	...	3	...	...	...	1	...	40	...	12	...	...	...	5	...	...	168	...	1	...	...	...	...	1	1	...	1	1	...	3	269
32	3	3	2	1	1	4	3	56	...	25	...	6	...	23	...	1	436	6	1	...	...	5	2	1	2	...	12	2	1	9	724
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	327
16	...	...	2	2	...	...	2	10	...	14	...	1	...	1	...	...	74	...	1	...	...	...	...	2	...	...	1	...	...	12	157
5	...	1	...	...	2	1	...	22	...	11	...	1	1	7	...	...	340	...	2	...	...	1	1	2	1	1	1	...	...	17	447
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	89
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...	...	...	12	1	...	...	...	1	...	...	...	5	...	1	1	...	...	...	1	...	66	21	...	...	2	...	...	...	...	1	162
...	...	...	13	...	...	1	...	...	1	1	...	36	1	2	...	...	1	...	3	...	63	14	...	...	2	...	4	...	1	1	252
...	1	...	24	11	...	...	...	...	...	1	...	1	...	2	1	...	1	...	9	...	50	19	...	...	1	...	1	...	...	6	233
...	...	...	205	11	...	...	...	...	...	...	...	1	...	...	2	...	...	...	2	...	82	138	...	...	...	...	1	...	...	...	687
4	...	1	27	2	...	...	1	...	...	7	...	8	...	...	...	...	4	...	13	...	37	20	...	1	16	1	2	...	...	2	227
...	...	...	...	1	...	...	...	...	...	...	...	10	...	...	...	...	...	...	1	...	53	1	...	...	1	...	...	...	...	...	79
...	2	...	36	2	...	...	...	...	...	...	...	3	...	1	...	...	...	...	5	1	80	26	...	...	...	1	4	...	...	...	257
1	...	...	20	...	...	...	1	...	...	...	...	1	...	3	1	...	...	...	1	...	68	17	...	...	...	...	...	...	...	1	160
...	...	...	2	1	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	23	1	...	...	...	...	...	...	...	...	37
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border. Some colleges were unable or failed to enumerate students by states. These do not appear in this table.

There are a number of medical schools not given here because they do not grant degrees. Many of them conduct only the first two years of the medical course.

In the Canadian schools given on page 572 no detailed mention was made of the following colleges, from which catalogs or other data were not received: Faculty of Medicine, Queen's University, Kingston, Ont.; Manitoba Medical College, affiliated with the University of Manitoba (the course of the latter is four years of eight months each); Ecole de Medecine et du Chirurgie. (This college is the Montreal branch of the Medical Faculty of the Universite-Laval in Quebec. It is a French school and was incorporated in 1845. Its students in all classes now number from 280 to 300 each year); and Halifax Medical College. The last mentioned college supplies no "preliminary examiners"; students are referred for examination to the Registrar of the Provincial Medical Board. The course consists of four years of eight months each. The fees for the full course are $300, and $30 for graduation.

The changes in colleges this year are the consolidation of Denver College of Medicine and Gross Medical College, the suspension of Northwestern University Woman's Medical College, Chicago, and Cincinnati College of Medicine and Surgery and the establishment of Oakland College of Medicine and Surgery, Oklahoma City Medical College, Department of Medicine of Temple College, Philadelphia, and the Physio-Medical College of Texas. Some minor schools, which hardly could be said to exist before, have gone out of existence.

The only three-year medical school remaining is the North Carolina Medical College. The restriction of the state boards of registration are leaving few states available for practice to the graduates of this school. Sewanee Medical College, Tenn., was a three-year school but begins a four-year system this year.

A Note on Teaching the History of Medicine.—William Osler observes, in the *British Medical Journal,* that in the everyday work of the wards, and of the out-patient department, the student may be helped to get into the habit of looking at a subject from the historical standpoint. In his out-patient class this is made a special feature of the teaching. A case of exophthalmic goiter comes in—the question at once is put: Who was Graves? Who was Parry? Who was Basedow? Of course the student does not know; he is told to bring, on another day, the original article, and he is given five to ten minutes in which to read a brief historical note. Osler takes from the class-book at random the titles of some subjects which have been presented this session, very often to the edification of the teachers as much as the students: Sydenham's description of chorea, Valsalva's method of treating aneurism, Tufnell's method of treating aneurism, the history of our knowledge of lead poisoning, Abram Colles and his law, Dr. King's safety valve action of the tricuspid valve, Bright's original description of the disease which bears his name, Glisson's original description of rickets, Blaud and his pill, the history of hemophilia in America, the history of diabetes. Once a week he meets his clinical clerks in an informal conference on the events of the week. For half an hour he gives a short talk on one of the "Masters of Medicine," in which, as far as possible, the original editions of the works are shown. In the present crowded state of the curriculum it does not seem desirable to add the "History of Medicine" as a compulsory subject. An *attractive course will catch the good men and do them good,* but much more valuable is it to train insensibly *the mind of* the student into the habit of looking at things from the historical standpoint, which can be done by individual teachers.—From the *St. Louis Med. Review.*

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SATURDAY, SEPTEMBER 6, 1902.

THE MEDICAL COLLEGE STATISTICS FOR 1902.

One hundred and fifty-six medical colleges, with 6,776 instructors, enrolled 27,501 students and graduated 5,002 students in the school year 1901-2. In the year previous. 1900-1, 156 colleges, with 5,958 teachers, enrolled 26,417 students and graduated 5,444. Twenty years ago there were 89 medical schools with 14,934 students and 4,115 graduates. The increase in the number of schools and students is far in advance of the increase in the number of graduates. The graduates twenty years ago were 4,115: in 1900, 5,314; in 1901, 5,444, and in 1902, 5,000. The attendance in twenty years has therefore increased nearly 200 per cent. and the number of graduates has increased less than 25 per cent. The decrease in the number of graduates in the last year is assigned to the increased length of course of study and increased requirements by state boards. It is considered by many a temporary decrease and one that will be changed to an increase as soon as the temporary check is overcome. The decrease in graduates is classified thus: There were 4,879 graduates from the regular colleges in 1901; 387 from the homeopathic: 148 from the eclectic, and 30 from the physio-medical and nondescript; total, 5,444. In 1902, 4,498 graduated from regular schools; 336 from the homeopathic; 138 from the eclectic, and 27 from the others; a decrease in every class. The increase in students is classified thus: There were 23,846 students registered at the regular colleges during the year ending July 1, 1901; 1,683 at the homeopathic; 664 at the eclectic, and 224 at the physio-medical and nondescript; a total of 26,417. During the year ending July 1, 1902, 24,878 students registered at the regular colleges; 1,617 at the homeopathic; 765 at the eclectic, and 241 at the physio-medical and nondescript; total, 27,501. This is an increase among all but the homeopathic schools. In the year the regular schools increased in enrolment 1,032 and decreased in number of graduates 381. The homeopaths lost in enrolment 66 and in graduates 51; the eclectics gained in enrolment 99 and lost 10 in graduates; all other schools gained 17 in enrolment and lost 3 in graduates.

THE MODERN UNIVERSITY MEDICAL SCHOOL.

In another part of this issue will be found a most excellent, thoughtful and practical paper on the modern university, with special reference to the part the medical department should play in the university as a whole and in its relations to the other special departments. Whatever the ideal university may be, and there is room for some difference of opinion in regard to this, the author of the paper has fairly stated his ideas on the status of the medical school in the university and the function of the university body as a whole in its relations to the medical department. We wish to speak, however, about two features: the author's views in regard to the facilities for medical education and the innovation of the continuous course.

THE JOURNAL has long maintained that it is quality and not quantity that is demanded in the American medical profession, and that our systems of medical education have heretofore worked directly against this desideratum. We have multiplied medical colleges, reduced expenses and in every way sought to facilitate entrance into the profession. If the university medical school is to continue this policy it seems to us that its real usefulness to the profession and the public will be to that extent reduced. Nevertheless, this seems to be in a measure one of the ideas advanced by the author of the paper. He offers his ideal of requirements that should be demanded for admission, a high-school course and two years of college, and while admitting the advantages of a full collegiate course, holds that it would be unfortunate if all the high grade medical schools should adopt such a requirement.

None of us ever exceed our ideals in practice, unless, indeed, they are so low that circumstances force us to do so, and such a condition of affairs is not to be here considered. If we lower our ideals we lower conduct still more, and this is as true as regards medical education as anything else. The author admits that provisions must be made for exceptions in which his standard is not to be required, and it will be very easy in practice to make such exceptions prove to be the rule. There would be every temptation to such a course. If a man has a real vocation to medicine and the needed virile energy, he will get his medical education if he has to get a college degree first. It should not, in our opinion, be the aim in medical education to in any way lower the standard or to render the entrance into the profession less difficult than is demanded by a course that will be equal to that given in any part of the world. Let the high-school course and the two years of college be the minimum and not the ideal requirement for admission.

We wish, however, to protest against another view advanced. The author speaks of the continuous course as beyond question one of the features of the future university school of medicine, which may be true, but the arguments advanced for it do not strike us favorably. It may be more profitable to keep open house for medical aspirants all the year round, but this is not the highest sort of argument for the course. In several of the state medical practice laws it is particularly specified that the three or four medical courses must be in separate years, and similar provisions are included in other states in the regulations which the registration boards are authorized to make. This has been rendered necessary, or at least so considered, in the past, and very likely will be still so considered in the future. We do not therefore fully appreciate the force of the plea for the continuous course that it should be adopted because it will enable the ambitious, progressive student to shorten the period between his matriculation and graduation, or that this ought to be made possible. The specially able student ought, in a university, to be able to profitably spend four years' study time, even if he has to exceed the minimum requirements of a pass examination by so doing, and we believe it will be more profitable for him and beneficial to the profession generally to make it compulsory so to do. The continuous course should not mean in any sense a short cut into the medical profession. Neither do we think that it is so intended by the author.

There is very much in Dr. Dodson's article that we can cordially approve, and its very excellence as a whole makes it appear the more necessary to call attention to this point. In the past, American medicine has suffered before the world because, while its focal brightnesses have been conspicuous, its average illumination has been considered low. We should therefore in the work, in which we all are so earnestly concerned, of elevating its standing, be most jealously critical of any and every tendency, however recondite or insignificant it may appear, that may defeat our object.

THE EXTRAMURAL CLINIC.

The problem of providing a sufficient amount of clinical material for the adequate instruction of students is coming to be a serious one. The exhibition of patients, medical or surgical, in an arena clinic, before large classes, can no longer be deemed an adequate means of training as a preparation for practical life. It would perhaps have been better if the term "clinic" had never been applied to such an exercise. As ordinarily conducted it might be more properly termed an illustrated didactic lecture. The word clinic, signifying as it does, etymologically, the bedside, ought to indicate an exercise in which the students singly, or in small groups, are brought actually to the bedside of the patient so that each individual is allowed to examine by sight, hearing and touch the phenomena presented. Only by such methods can the eye, the ear, the tactile and other senses be properly educated. The provision of cases in sufficient numbers to teach in this way large classes of students, means a very large number of hospital beds and dispensary patients. We know of no medical school which possesses these facilities to anything like the degree necessary. The maintenance of hospitals, under the absolute control of the college, is enormously expensive—far and away the most costly item in the conduct of the institution. On the other hand, there are, in every large city, many hospitals to which the admission of students, under suitable restrictions, would inevitably result in the more thorough and careful examination of the patients and the stimulation of the attending staff to better work. It is a trite but true observation that only the very rich and the very poor receive the best medical attention—the rich because they are able to pay well for it, and the poor because they are largely to be found in teaching hospitals under the care of the most able and painstaking diagnosticians—the medical teachers.

Here, then, are physicians on the staff of unattached hospitals who are willing and anxious to teach, students greatly in need of clinical material and instruction and patients who will be benefited in every way by being made the subjects of such examination and demonstration. How can these several groups be mutually helpful to each other? The extramural clinic, so long in vogue in Edinburgh and other foreign schools, seems to offer a solution, and is being utilized in some of our American colleges. Clinics are offered at these outlying hospitals by members of the staff, to which the students of a neighboring school or schools are admitted, the physicians giving such courses becoming extramural members of the faculty of the college. Certain provisions are necessary to the perfect success of the plan. The elective system greatly facilitates its successful operation, for such work must be made elective on the course for the degree, credit being allowed in proportion to the amount and character of the work. The exercises in each hospital and for each group of students must be so arranged that there is the least possible loss of time in going back and forth. This is best accomplished by arranging for exercises at one place to occupy a half day. When so arranged experience has shown that students will cheerfully go several miles to attend them. The classes must be small, seldom exceeding eight or ten, for the chief inducement to the student is the opportunity afforded him to come into immediate contact with the patients. The teachers must be carefully selected with regard to their ability and faithfulness; never should an extramural appointment be made simply because the appointee commands a large amount of material.

Great care must be exercised in the careful handling and the courteous treatment of the patients, and when this is done they not only do not resent, but eagerly welcome the opportunity to be presented to the class. There are few exceptions to this rule. It is rarely necessary or best, for either patients or students, that the latter be taken into the large wards of a hospital. All of the advantages of "walking the wards" with the clinician may be much better secured by having patients brought to an examining room—one, two or three at a time—to be studied there, away from the noise and distractions of the large ward.

Numerous hospitals aggregating thousands of beds are within easy access of the medical schools. Only the persistent, tactful education of the public, and especially of the managing boards, is necessary to open their doors for clinical instruction, which, with ment, must inevitably result in the benefit of all concerned. It is safe to predict a large field of usefulness for the extramural clinic.

MEDICAL HISTORY.

Over a year ago[1] we directed attention to the need of more general study of the historical side of medicine. In view of the importance of the subject and the almost universal interest being awakened in it at present, it will not be amiss to refer to it again, and to mention some recent additions to medical history in America. In "The Relation of Yale to Medicine," delivered at the two hundredth anniversary of the founding of the college,[2] Prof. Wm. H. Welch of Baltimore has added another article to the list of those relating to American medical history. In this paper he writes in his usual interesting manner about the founding of Yale Medical Department and the men who have been active in advancing its interests. He emphasizes the value of a good practical knowledge of chemistry, physics and general biology in the preliminary training of prospective medical students, and gives to Yale the credit of first clearly recognizing and supplying this want in the Sheffield Scientific School.

The history of American medicine has received many valuable contributions through the activities of the Johns Hopkins Historical Club. These have been published in the *Johns Hopkins Hospital Bulletin* and have served to familiarize American physicians with the work of men concerning whom they had previously known but little. A recent article by J. G. Mumford[3] has added a biographical sketch of Dr. Jacob Bigelow, which is worthy of a place among the previous ones. Mumford says that the Massachusetts Institute of Technology, with its splendid curriculum, its strong staff and its host of highly trained and successful graduates, stands to-day a monument, in part at least, to the energies of Jacob Bigelow. In an article on "The Work of Jenner and His Most Faithful Disciple, Waterhouse." Wm. M. Welch of Philadelphia has introduced, for the first time to a large part of the profession, the man through whose efforts vaccination was introduced into almost every city and town in the country. I. N. Danforth[4] furnished our readers a valuable, although necessarily incomplete history of Samuel Fuller, "the earliest practitioner of medicine in Massachusetts."

These recent writings on the history of American medicine and medical men are an indication of the interest being taken in the history of the medical affairs of our own country, and should serve to stimulate similar efforts by others who are in positions to contribute anything of value and interest.

Instruction in medical history should be given in every medical school. Provision for this has been made in several, but it is far from general. Such instruction by a well-informed lecturer could certainly be made very popular among students, and would have the effect of enlarging the interests and elevating the ideas of many students regarding their chosen profession.

In the Italian universities, medical history seems to have occupied a better position than elsewhere, regular lectures upon this subject being given in most of the Italian schools. The editor of the *British Medical Journal*[5] made the statement that there was no professor of medical history in England, Germany or Holland. In a later issue[6] it appears that lectures on this subject are given in the universities of Vienna, Berlin and Würzburg. Formerly such lectures were provided by many of the German universities, but for some reason they have been largely discontinued. E. Braatz[7] urges the German universities to resume instruction in medical history. The agitation of the subject in England and Germany may be expected to lead to more general interest, and with it medical history will take its proper place in the medical course.

In America our own medical history is receiving the attention of some of our most talented men, and it is to be hoped that every medical school will soon have a professor of medical history who shall be sufficiently remunerated for his work so that he may be a man with special ability and preparation for the place.

DISINFECTION OF THE URINE IN TYPHOID FEVER.

If a physician were to neglect disinfection by some simple, recognized method of the stools in typhoid fever, he would be held blamable, and justly so. If he were to omit cautioning the consumptive in regard to the dangerously infectious character of the sputum, he would be regarded as careless and negligent. Again, if the physician were to permit his scarlet fever patients to run about in the neighborhood before desquamation is completed, it would spread consternation through the community and the general condemnation of such action would not be slow in making itself effectively heard.

Numerous other instances could be mentioned of equally glaring sins of omission and commission in the preventive treatment of infectious diseases against which the general professional conscience would protest. How is it in the case of the urine in typhoid fever? It is demonstrated beyond doubt that in a considerable percentage of the patients suffering with typhoid fever, typhoid bacilli occur in the urine in large quantities, frequently so numerously that the urine is rendered turbid on that account alone. It is furthermore known that typhoid bacilli may persist in the urine for months and even years after an attack of typhoid fever, such persons being in reality perambulating disseminators of bacilli, which are deposited wherever urine falls. In this way, unless precautions are taken, the cause of typhoid fever may be perpetuated locally and new foci of disease started as the bacillophorous urine finds its

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1. The Journal A. M. A., Aug. 17, 1901, 453.
2. Medical News, June 21, 1902, 1165.
3. Johns Hopkins Hospital Bulletin, January, 1902.
4. The Journal A. M. A., Nov. 16, 1901.
5. British Medical Journal, March 15, 1902.
6. Idem., May 31, 1902.
7. Deut. Med. Woch., Jan. 24, 1901.

way into the sources of water supply. With the springing up of brisk endemics of typhoid here and there the question arises, are physicians using proper precautions in regard to the urine of their typhoid patients? Has the proper care of the urine become a matter of definite routine as is the case with the stools? Probably much more ought to be done than is being done. Certainly a convalescent typhoid patient should not be allowed to leave the hospital or be discharged from supervision before the condition of the urine as to the absence or presence of typhoid bacilli has been established. This would require a bacteriological examination of the urine, at least in many cases, and this the vast majority of private practitioners are unable to do as thoroughly as modern sanitary ideas require. In the case of hospitals, however, such examination ought to be a matter of routine. We are in need of further reports concerning the presence and persistence of typhoid bacilli in urine after attacks of typhoid fever. Careful observations should be made with the view to the establishment of easily practicable methods by means of which the practitioner can determine for himself the condition of the urine of his typhoid patients. In the meantime, it is our plain duty to do all in our power to prevent the spread of typhoid fever by the urine. Much may be done by the systematic use of reliable urinary disinfectants, such as urotropin, which should be administered for a reasonable time to every typhoid convalescent. Patients should be informed of the fact that their urine may be dangerous. No doubt some of them would feel the responsibility thus placed on them and exercise a certain degree of care.

This is another striking example of the direct and real value of bacteriological laboratory methods applied to practical medicine. As the matter now stands it is quite clear that practitioners of medicine, in order to do their full duty in this matter of typhoid fever, must possess or control sufficient bacteriologic skill and apparatus to determine whether or not the urine of their typhoid patients is free from typhoid bacilli before returning to their usual modes of life.

A TESTIMONY.

The *Hahnemannian Advocate,* a publication whose name indicates its character and aims, is disturbed by the statistics of medical education given in our last year's educational number. It says editorially:

> We have not the space to show the summaries from which the *per cent. of gain* made by the dominant school for the past ten years may be drawn, but the fact remains and must be faced. A study of these summaries reveals the fact that:
>
> 1. There are only five allopathic to one homeopathic college, although their alumni are more than ten to one.
> 2. Their teaching force outnumbers our own, because their laboratories are more extensive and better-equipped.
> 3. Their average attendance is about one hundred and ninety, while we have only seventy-five.
> 4. The similarity in the course of study during the first two years naturally leads the student to select that institution offering the most comprehensive laboratory facilities
> 5. The similarity in the course of instruction during the last two years naturally leads the student to stay where he is.
>
> We believe these five conclusions tell the whole story. There are too many homeopathic colleges for the present support, hence they are compelled to draw on private resources for the necessary means to carry on their work. Their laboratories are incomplete and clinical facilities inadequate. Only such students are drawn to their classes as have been impressed with superiority of homeopathic principles before they become medical students.

We do not often quote this contemporary, but the above testimony is perhaps of some interest on account of its source.

THE RETIREMENT OF GOVERNOR GAGE.

The country is to be congratulated on the failure of Governor Gage of California to receive a renomination by his party. His course in regard to the existence of plague in San Francisco, the ostrich policy he adopted and the measures he seems to have advocated for the suppression of the facts should each and all condemn him to retirement from public life at the present time. We do not know at this distance and at the present time what were all the factors in the contest, but may allow ourselves to legitimately infer that Governor Gage has not won all the popularity he anticipated from his zeal in suppressing facts that seemed to him against the commercial interests of the city of San Francisco. The fact, also, that the successful nominee, Dr. Geo. C. Pardee, is a physician is perhaps significant. So far as we have yet heard there is nothing in his record that would indicate that he would put himself in opposition to his profession and continue a policy that is full of danger not only to the state of California but of all regions in connection with it. Plague, properly managed, does not in these modern times seem to be such a general peril in civilized countries as in times past. If, however, its existence is wilfully ignored or due precautions are not employed, there is no telling when an outbreak of the disease may not occur, rivaling in severity those of the past. The existence of an Oriental population in California, herding by itself under the most unsanitary conditions in its cities and concealing rather than reporting infectious disease, renders the existence of such an infection as bubonic plague among them a very serious problem, demanding the most earnest attention on the part of all who have to do with the administration of state affairs. Whatever Governor Gage's merits may have been in other respects, he was wilfully and culpably lacking in his duty in this particular regard. This is not an unimportant matter; it is the one question of all others that has arisen in his administration, that concerns not only California but all the rest of the country. Any change would therefore be welcome as an end of what has been, and the nomination of a medical man in sympathy, as we trust, with the best element of his profession, is the strongest possible rebuke to the ostrich policy of the past.

PATENT INSIDES FOR MEDICAL JOURNALS.

Medical journals with "patent insides," like the daily papers that are published in country towns, are almost in sight. Two concerns in an eastern city announce that they are going to syndicate a group of medical journals which will pretty well cover the United States. They propose to employ medical writers who will contribute to the papers controlled by the syndicate. The matter thus produced is to be made into plates at headquarters and furnished to each of the journals once a month. They announce that they have employed translators and abstractors, and that they will occupy with their matter some twenty-four pages in each issue of each of the journals entering into the arrangement. There is to be no charge for this service, except that the syndicate managers are to have absolute control, without cost to them, of a certain number of advertising pages in each of the journals. Up to the present time the promoters of these schemes are not asking the journals to pay them in this way much over three times what their service would be worth when rated at the highest notch. The scheme is a bad one, because it will tend to stereotype medical literature and to crush original work in medicine, that is, in case it were generally adopted, which, of course, is not at all likely. Very few journals will agree to such a one-sided arrangement, and those that do will necessarily be marked by the profession as being almost moribund. But the most objectionable feature of the proposition lies in the fact that any journal accepting it thereby places a certain amount of its space for original matter and a certain number of its advertising pages under the control of laymen who have no interest in maintaining ethical standards, but whose chief aim will be to make money out of the scheme, even if in doing so they send out as original articles papers which are written chiefly for the purpose of benefiting some advertiser. The medical profession can certainly not be expected to take a kindly view of such a proposal, and it does not seem possible that success will come to it. It is certain that hereafter readers of medical journals will examine them critically in order to discover which ones may have been deluded.

Medical News.

Owing to the space taken by the educational matter in this issue, all regular departments are greatly reduced and some are omitted.

CALIFORNIA.

Maternity Ward.—Through the generosity of Mrs. Robert J. Burdette, the building of a maternity ward for the Pasadena Hospital is assured.

More Plague in San Francisco.—During August, 2 new cases of bubonic plague were reported in San Francisco, making a total for 1902 up to this date of 13, with 12 deaths.

Riverside Hospital Incorporated.—Articles of incorporation of the Riverside Hospital Association were filed, August 20. The company is capitalized at $25,000, of which $6275 has been subscribed.

Dr. Lane's Estate.—The value of the estate of the late Dr. Levi Cooper Lane, San Francisco, has been appraised at $301,108.56. His widow, who died August 9, has left the bulk of the estate to Cooper Medical College.

Lane Medical Lectures.—The seventh annual course of Lane medical lectures was held this week. The lecturer was Charles B. Ball, M.Ch. Ireland, F.R.C.S. England, and regius professor of surgery in the University of Dublin.

CONNECTICUT.

Personal.—Dr. Brownlee R. Ward, U. S. Navy, has resigned and will devote his attention to private practice in New Haven.

Cancer Doctor Restrained.—In the case of A. Stanley Maine of Hampton, charged with practicing medicine without a license, the defendant was bound over to the Superior Court under $200 bonds, Maine agreeing to suspend practice until the Superior Court renders its decision.

Deaths in the State.—During July, 1394 deaths occurred, 333 more than in June, 97 more than in July, 1901, and 55 above the average of July for the five preceding years. The annual death-rate per 1000 for the larger towns was 19.9, for the smaller towns, 14.5, and for the whole state, 18.5. The deaths from infectious diseases number 527, or 37.7 per cent. of the total mortality.

The Hubbard Deeds.—The New Haven Medical Association stands in a queer relation to the property of Dr. Stephen G. Hubbard, which consists of grounds and a dwelling valued at $50,000. Dr. Hubbard, on May 11, 1901, deeded the property to the trustees of the New Haven Medical Association on condition that the association erect within three years after his death a building for its uses to cost not less than $10,000, the plans for which are to be submitted to him. The association recorded the deed. It was then discovered that a deed of the same property had been previously recorded conveying the property to a niece of Dr. Hubbard. Dr. Hubbard reserved the life use of the estate in both deeds.

ILLINOIS.

Personal.—Dr. Henry V. Bailey, Pekin, sailed for Glasgow, August 23.

Epileptic Home Burned.—The Illinois Home for Epileptics at Arlington Heights was burned, August 30. Through the efforts of the resident physician the inmates were rescued without casualty.

Lincoln Asylum Changes.—Dr. John R. Barnett, assistant superintendent of the Illinois Asylum for Feeble-Minded Children, Lincoln, has resigned, and Dr. Charles B. Taylor, Elkhart, appointed in his stead.

Chicago.

Personal.—Dr. Nicholas Senn has returned from his mission to St. Petersburg and a long journey to the Orient.

The University of Chicago.—At the recent convocation, President William H. Harper reported that the medical department had been paid a gift of $50,000, and that the expenses of the department for the year had been less than the estimated amount.

Deaths During August.—There were 2330 deaths from all causes reported to the health department during August, 1902, or 161 more in number and 3.9 per cent. more in the annual rate per 1000 of population, compared with the figures of August, 1901. The annual death-rate per 1000 was 15.06. The report shows that 610 children under one year old, died: that 597 deaths were caused by acute intestinal diseases; 193 by typhoid fever; 177 by violence; 181 by consumption and 136 by heart diseases.

Medical Arrangements for Labor Day.—On the line of march on Monday last five emergency tents were located, with thirteen physicians and five nurses in attendance. Three of these nurses were from the Visiting Nurses' Association and two from the Frances Willard Hospital. Dr. S. W. Cox was in charge of the headquarters tent at Michigan avenue. The day was free of serious accidents and fewer than a score of persons were in need of treatment, most of those treated being slight cases of overheat.

Efforts at Suppression of Typhoid.—When the excessive incidence of typhoid first forced itself on the attention of the department and study showed the so-called "storm center" to be located in the ghetto district, efforts for suppression were concentrated in those areas. But the work the department was able to do served mainly to show how futile and inadequate were its resources. Food, chiefly fruit and vegetables, unfit for human consumption, was condemned and sprinkled with kerosene, but the department had no authority similarly to sprinkle with kerosene the 20 per cent. of dwellings found in these areas unfit for human habitation.

Excess of Typhoid Fever.—Of the excess typhoid fever deaths contributed nearly 70 per cent., the respective numbers being 83 last August and 193, or 110 more, in the month just ended. This is the greatest number of August typhoid deaths ever recorded in Chicago. The highest previous August typhoid deaths were 182, in 1891. Since then the August deaths have been 179, 76, 52, 59, 64, 42, 45, 62, 34 and 83 for the respective years 1892-1901. These figures are cited to show that the department has been fomenting no unwarranted scare in its utterances on the typhoid situation during the last three or four weeks. They show an increase of fully 57 per cent. in the typhoid mortality of August, 1902, over the average August typhoid of the previous ten years.

NEW YORK.

New Medical Building for Cornell.—The contractor announces that the new medical building for Cornell will be ready for occupancy at the opening of the fall term.

Telephone-Receiver Infection.—Dr. Bissell, city bacteriologist of Buffalo, is to make bacteriologic examinations of receivers of public telephones with the idea of planning some method whereby infection from this source may be averted.

Buffalo Personals.—Drs. Roswell Park and Blair have returned from Europe.——Dr. Arthur J. Patek, Milwaukee, was the guest for a few days of Dr. Julius Ullman.——Dr. Jane W. Carroll was recently appointed supreme medical examiner of the Ladies' Catholic Benevolent Association.

Physiologic Laboratory Building.—The University of Buffalo Medical Department is building an additional story for the physiologic laboratory, at a cost exceeding $5,000. When the laboratories have been completed a prominent Buffalonian will completely equip them, thus making this laboratory one of the most complete in the country.

Fumigation of School Books.—The health department of Buffalo has undertaken to fumigate the 250,000 books used in the public schools. The old books will be placed in large receptacles and fumigated thoroughly with formaldehyd. Health Commissioner Green believes that danger of infection from communicable diseases will be averted in this way.

OHIO.

Bequest to Hospital.—By the terms of the will of the late Mrs. Katherine Aultman, $100,000 is bequeathed to the Aultman Hospital, Canton.

Youngstown Hospital Opened.—The new City Hospital at Youngstown, which has accommodation for 139 patients, and was given to the city by Myron C. Wicks, has been formally opened.

Declines Merger.—The efforts of President Thwing to make the medical department of Ohio Wesleyan University a part of the Western Reserve Medical School have been without result, as the university refuses to sell at the present time.

Personal.—Dr. Thomas A. Burke, Cleveland, has returned after a long course of special study abroad.——Dr. Royce D. Fry, Cleveland, has returned from Europe.——Dr. Frederick D Barker, Dayton, has resigned from the medical department of the Ohio National Guard.

Found Guilty and Sentenced.—Dr. James H. Ferrell, Marion, who was found guilty of an attempt to commit an operation which contributed to the death of Miss Laura Hite of Wyandot County, some time ago, has been sentenced to the penitentiary for two years.

Did Not Substantiate Charges.—The society which caused the arrest of Dr. John L. Hoyer of Cleveland failed to substantiate its charges at the trial. The warrant charged that the physician failed to qualify under any section of the statute regulating the practice of medicine. He was accordingly acquitted.

Dr. Brand at Last Successful.—Health Officer Dr. Walter W. Brand of Toledo, who has been untiring in his efforts to secure for Toledo a contagious disease hospital, has at last succeeded. The mayor signed the ordin [illegible] the issue of $20,000 in city bonds for the [illegible] the hospital.

Faculty Changes.—At Ohio Medical University, Columbus, Dr. John H. J. Upham has resigned as professor of principles of surgery and clinical surgery, and Dr. James U. Barnhill, elected in his stead; Dr. William McPherson was elected professor of chemistry, vice Prof. E. T. Watson, resigned; Dr. Theodore W. Rankin has been made full professor of therapeutics and clinical medicine.

PENNSYLVANIA.

Typhoid in Pittsburg.—Fifteen new cases of typhoid fever were reported in Pittsburg, August 22.

Many Apply.—The White Haven Sanatorium for Consumptives is overwhelmed with requests for admission. There are many on the waiting list. President Flick believes that at a cost of $6,000,000 tuberculosis could be stamped out of Pennsylvania in 15 years.

Personal.—Dr. Lena A. Benjamin, Bradford, sailed August 23 on the *Kroonland* for Antwerp, en route for India, where she is to take charge of a hospital at Nellore in the Madras Presidency.——Dr. Harris R. Lecrone sailed for Europe, August 16. He will take a three months' post-graduate course in Vienna.

Philadelphia.

Deaths of the Week.—Within the week ended August 30 there were 417 deaths from all causes as compared with 379 deaths for the previous week.

Personal.—Dr. George E. de Schweinitz has returned from a European trip.——Dr. John A. Passmore is seriously ill at his home.——Dr. and Mrs. Francis Correa of Germantown recently returned.——Dr. J. William White has made a trip over the Swiss Alps this summer.

Typhoid Epidemic Feared.—There are some grounds for fear of an epidemic of typhoid fever. For the week ended August 30 92 new cases and 10 deaths were reported. Only 56 new cases occurred the preceding week. The cases are distributed throughout the city and are probably due to an impure water supply.

Hospital Endowments.—By the will of the late Mary E. Jackson $5000 each, for the endowment of free beds, is bequeathed to the Pennsylvania Hospital and to the Protestant Episcopal Hospital. A reversionary bequest of $6000 is made to the Protestant Episcopal City Mission, in trust for the Hospital for Diseases of the Lungs, the purpose being the endowment of a free bed.

GENERAL.

New Resident at Molokai.—Dr. W. J. Goodhue, at present the physician and surgeon to Eleele plantation, Kauai, has been appointed resident physician to the Leper Settlement, Molokai, by the Hawaii Board of Health.

Discuss Cholera Situation in Manila.—The Board of Health held a joint meeting with the local physicians in Manila, July 11, for the purpose of considering the cholera question and to adopt measures for preventing the spread of the disease.

To Revise Regulations.—Dr. Arthur H. Glennan, U. S. M.-H. Service, Havana, has been appointed a member of the board of officers who have been selected to revise the regulations of the new Public Health and Marine-Hospital Service, and has started for New York.

Dysentery and Dhobie Itch Disappearing.—Surgeon-General Forwood has received recent advices that dysentery, which heretofore has caused more sickness and deaths than any other disease among the troops in the Philippines, has practically disappeared. It has succumbed to the strenuous efforts of the medical department for its eradication. Strict sanitary measures have been enforced, including the boiling of all drinking water, and rules for bathing, and particularly the washing of hands before handling food. Another source of great satisfaction to the medical department is the eradication of a tropical skin disease commonly called "dhobie itch." This disease, while not fatal, was considered almost in the nature of a scourge among the troops in the islands.

Cholera Situation Unchanged.—All hope of staying the cholera epidemic in the Philippines has been abandoned until the typhoon season sets in. Only light rains have yet fallen, serving only to stir up the streams and diffuse the cholera germs, and Surgeon-General Forwood says that no material change for the better can be expected until the heavier storms begin. He lays much of the blame for the spread of the cholera and its great mortality to the incapability of the majority of the Filipino doctors. So long as these were under the direct supervision of American officers they rendered valuable assistance in staying the epidemic, but when left to their own devices, through the reductions of the American force in the islands, he says, they have failed to carry out instructions, ignored the simplest rules of sanitation, and in many instances done more harm than good. The trickery of the natives in concealing new cases has also assisted in the spread of the disease.

Smallpox.

CONNECTICUT: In July 40 cases were reported in 4 towns. Thompson had 29 cases, New Britain 9, and Stamford and Waterbury each one.

ILLINOIS: Springfield is the only city reporting a case of smallpox to the State Board of Health during last week; the patient came from Patoka, Indiana.——There were but nine cases of smallpox discovered in Chicago during August, and of these only two were residents; of the remainder, three were importations from Cleveland, one from Wisconsin, one from Indiana and one from the state outside Chicago. None had ever been vaccinated; there were no deaths from the disease, and at the close of the month there were only nine cases under treatment in the isolation hospital.

Maryland: Another case of smallpox is reported near Williamsport in the western part of the state. Several cases have previously existed in the suburbs of that town, which are still under quarantine and special treatment.

Pennsylvania: The town of Parryville, Carbon County, is suffering from an epidemic of smallpox; nearly one-tenth of the population of 500 is affected by the disease. A strict quarantine has been established.

Canada: There are now but four cases in the Montreal Hospital, and the disease will be wiped out in a very short time.

England: The Metropolitan Hospitals, London, now contain only 305 cases of smallpox against numbers decreasing from 1515 to 369 on the 14 preceding Saturdays; 44 new cases were admitted in the last week against 51, 48, 23 in the three preceding weeks. During the second quarter of the year the number of fatal cases amounted to 507, against 35, 193 and 734 in the three preceding quarters, and an average of 11 in the second quarters of the ten preceding years. During the quarter 3215 cases were admitted to hospital against 286, 1491 and 4873 in the three preceding quarters.——The medical officer of health for Swansea has reported to the sanitary committee that smallpox, which has been prevalent at that port for some months, has assumed serious proportions, and is now in epidemic form.

Barbadoes: Smallpox has again made its appearance in this island, there being now 15 cases strictly isolated at the quarantine station, located on Pelican Island, separate from the mainland. The prevailing opinion among the physicians is that the disease is under control and will not become epidemic. No deaths have been reported by the Board of Health.

CANADA.

Montreal Death Roll.—The mortality statistics for the past week in Montreal show a total of 123 deaths. The principal causes of death were: Phthisis and other chest diseases, 29; infantile debility, 49; croup, 1; typhoid fever, 2; measles, 2.

Appointed Autopsist for Montreal District.—Dr. C. A. Dugas, who for some years was assistant to the late Dr. Wyatt Johnston, the autopsist for the district of Montreal, has been appointed by the Attorney General of the province of Quebec to succeed Dr. Johnston. He will have as his coadjutor Dr. D. D. MacTaggert.

Heavy Infant Mortality in Toronto During August.—The returns from the Toronto cemeteries during the month of August show a total of 246 interments, or 15 more than for the month of July. The total deaths from contagious diseases were three, all diphtheria. There were 111 children under five years of age interred, and 11 adults over 82 years, one over 90 and one 92 years of age.

Enforcing Montreal's Vaccination By-Law.—A case of some importance has been decided by Recorder Porier in regard to the right of the city of Montreal to enforce the by-law calling upon the employers of labor to compel employes to be vaccinated. The action was taken by the medical health officer to compel the vaccination of an employe of the Dominion Cotton Company. The recorder imposed a fine of $5 on the company.

FOREIGN.

Merida Hospital.—The contract for the construction of the Merida, Yucatan, hospital, for the sum of $900,000, has been given to Mexican contractors.

Esmarch's Birthplace.—The house in which Esmarch was born at Tönning, in Schleswig-Holstein, has been marked with a tablet by the local authorities.

Forged Diplomas at Barcelona.—The faculty at Barcelona have discovered that several persons are in possession of forged diplomas conferring degrees in medicine or law. All the diplomas issued in the last twenty-five years are now being revised and verified.

Recrudescence of Plague in Sydney.—On July 11 a rat infected with plague was discovered in Sydney, and a week later another rat dead from plague was found. It is reported that rats are dying in the district, and thorough inspection and cleansing of the affected locality have been made.

Prophylaxis Against Mosquitoes in France.—The French Conseil d'Hygiène recommends the usual measures against allowing stagnant water to accumulate, etc., and adds that fish should be kept in all public fountains, etc., and that a drop of tincture of iodin or of a 1 per cent. solution of guaiacol should be applied to every mosquito bite.

Statistics from the German Universities.—The number of medical students in Germany was 8141 in 1897, while at present it is only 6749, *a decline of nearly 17 per cent.* in the last five years. Berlin and Munich have about the same number of medical students as in previous years, 1018 and 1046 respectively, and the attendance at Rostock, Kiel and Heidelberg has increased. The decline is most apparent at Würzburg, Leipsic, Greifswald and Breslau.

The Prizes Offered by the Brazilian Academy of Medicine.—The Academy offers a gold medal and diploma for the best and second best works received during the academic year on the following subjects: Influence of malaria as a determining factor in aortic heart affections; fevers at Rio de Janeiro; clinical study of intestinal sutures; treatment of umbilical hernia; carcinoma of uterus; puerperal eclampsia; rôle of vegetable oxidases in therapeutics, and study of the mineral waters of Brazil, besides a few topics of merely local interest.

Golden Jubilees of German Physicians.—Our German exchanges this week bring a list of eight physicians whose friends have recently celebrated the fiftieth anniversary of their entrance upon their professional career. Among them is Dr. C. Schweigger of Berlin, who was decorated with the order of the Red Eagle on the occasion. L. W. Liersch of Kottbus was another. His name is well known by his works on ophthalmology and the history of medicine. Aufrecht of Frankfort a. O. closes the list. Several are "privy sanitary councillors" and one retired from active life two years ago.

Correspondence.

Gastroptosia not Gastroptosis.

New York, Aug. 19, 1902.

To the Editor:—In my letter which appeared in your issue for August 16 I noticed an error which may be either the printer's or my own slip of pen in manuscript. It reads "*epi* means on, upon or touching," while I wish to say "*peri* means on, upon or touching."

Being prepared to meet opposition—since it is generally believed that "*peri*" means around only—I ask you to insert this correction.

I know some of the Greek dictionaries are not explicit enough in regard to this word, and therefore allow me to say that not only in Greek spoken at present, but also in classical writers peri may distinctly mean "*upon.*" Περὶ, λίθον τεσέιν (Aristophanes, Acharnians v. 1180). Περὶ νῆσον ἀλώμενοι (Odyssey 4, 368).

A. Rose.

[Dr. Rose's original letter shows that he was responsible for the error.—Ed.]

The Relief of Itching in Ivy Poisoning.

Attleboro Falls, Mass., Aug. 28, 1902.

To the Editor:—Another remedy for the condition mentioned on page 441 of The Journal of August 23, itching of ivy poisoning, is to apply cloths rung out in a solution of grindelia robusta or eucalyptol and hot water, 1 to 10.

Respectfully, Willis L. Hale.

Book Notices.

American Edition of Nothnagel's Encyclopedia. Diphtheria. —By Wm. P. Northrup, M.D., of New York. Measles, Scarlet Fever, and German Measles.—By Professor Dr. Th. von Jurgensen, Professor of Medicine in the University of Tubingen. Edited, with Additions, by William P. Northrup, M.D., Professor of Pediatrics in the University and Bellevue Medical College, New York. Handsome Octavo, 672 Pages, Illustrated, Including 24 Full-page Plates, 3 of Them in Colors. Cloth, $5.00 net; Half Morocco, $6.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

This latest volume in the Nothnagel's series is devoted to the most common of the diseases met by the general practitioner, namely, diphtheria, measles, scarlet fever and German measles. The monograph on diphtheria, consisting of nearly 200 pages, is not from the German edition, but is written especially for this volume by Dr. W. P. Northrup, of New York. The author is to be congratulated on the exhaustive and practical manner in which he presents the subject. The remarkably favorable results from the use of antitoxin is shown by statistics which are presented in a convincing manner and whose reliability can not be denied. The plates illustrating the introduction and removal of the intubation tube show in a most practical and helpful manner the various steps in this often necessary, but to the novice, dreaded operative procedure. As the author says, every general practitioner, and especially one who lives far from cities, should be familiar with the process of intubation, and the text and illustrations in this monograph will make the operation one of comparative ease. The bibliography at the end of the article is practically a complete one. The articles on measles, scarlet fever and German measles by Von Jürgensen are exhaustive treatises on these diseases, with numerous additions by the American editor. The so-called "fourth disease" is not mentioned by the German author but the American editor discusses the question briefly and apparently does not believe that the existence of the disease as an entity has been proven. All that has been said in regard to former volumes in this series should be repeated here, and as volume by volume is added to this English translation, the enterprise of the publishers is more and more appreciated.

A Manual of Otology. By Gorham Bacon, A.M., M.D., Professor of Otology in Cornell University Medical College, New York. With an Introductory Chapter by Clarence J. Blake, M.D., Professor of Otology in Harvard Medical School, Boston. New (3d) Edition. In One Handsome 12mo. Volume of 437 Pages, with 120 Engravings and 7 Plates in Colors and Monochrome. Cloth. Price, $2.25 net. Philadelphia and New York: Lea Brothers & Co.

This condensation of the general principles of otology is designed as a work of easy reference for the student, and the book has been considerably enlarged and a number of original illustrations added and some new topics introduced, including lumbar puncture and the significance of leucocytosis in oral diseases.

The Roller Bandage. By William Barton Hopkins, M.D., Surgeon to Pennsylvania Hospital. With Illustrations. Fifth Edition, Revised. Cloth. Pp. 162. Price, $1.50. Philadelphia: J. B. Lippincott Co. 1902.

While this little volume, which here appears in its fifth edition, is called the "Roller Bandage," it is in fact a treatise of bandaging in covering the general principles. It is nicely illustrated with completely new illustrations.

State Boards of Registration.

Report of Examination in Indiana.—Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports the examination held at Indianapolis. July 8 to 10, as follows: Number of subjects, 18; number of questions, 130; percentage required to pass, 75. The examination was written. Number examined, 73; passed, 67; failed, 6.

PASSED.

Candi- date.	Sch. of Pract.	College.	Year Grad.	Per- cent.
274	R.	Jefferson Medical College	1899	89.5
277	R.	Jefferson Medical College	1902	92.7
254	R.	Rush Medical College	1902	91.6
275	R.	Rush Medical College	1897	83.7
260	R.	Rush Medical College	1902	92.3
213	R.	Rush Medical College	1902	88.3
214	R.	Rush Medical College	1902	95.2
215	R.	Rush Medical College	1902	89.5
217	R.	Rush Medical College	1902	89.0
219	R.	Rush Medical College	1902	91.6
221	R.	Rush Medical College	1902	93.0
228	R.	Rush Medical College	1902	91.8
271	R.	Rush Medical College	1902	93.6
222	R.	Rush Medical College	1902	92.3
266	R.	Rush Medical College	1877	79.5
253	R.	Medical College of Indiana	1902	90.8
232	R.	Medical College of Indiana	1902	92.1
264	R.	Missouri Medical College	1878	79.1
282	R.	Medical College of Ohio	1902	88.8
251	R.	Medical College of Ohio	1902	83.4
252	R.	Medical College of Ohio	1902	79.6
247	R.	Medical College of Ohio	1902	85.2
276	R.	Medical College of Ohio	1877	81.3
279	H.	Kansas City Homeopathic Med. Coll.	1901	79.3
233	R.	Laura Memorial Woman's Med. Coll.	1902	87.8
225	R.	University of Nashville	1902	91.5
224	R.	[illegible]	1902	90.2
249	H.	[illegible] l College	1902	81.3
270	R.	[illegible]	1902	88.0
212	R.	[illegible]	1902	93.5
210	R.	[illegible]	1902	89.5
211	R.	[illegible]	1901	87.3
267	R.	[illegible] Chicago	1902	88.8
218	R.	[illegible] Chicago	1902	89.8
229	R.	College of Phys. and Surgs., Chicago	1902	86.4
268	R.	College of Phys. and Surgs., Chicago	1902	86.8
226	R.	Miami Medical College	1901	92.4
283	R.	Miami Medical College	1889	84.5
246	R.	Miami Medical College	1892	83.7
216	R.	Washington University, St. Louis	1902	79.5
259	R.	University of Louisville	1898	80.0
236	R.	University of Louisville	1902	78.1
245	R.	University of Louisville	1902	90.9
272	R.	University of Louisville	1902	90.0
278	H.	Hahnemann Medical College, Chicago	1902	90.0
237	H.	Hahnemann Medical College, Chicago	1880	88.5
220	H.	Homeopathic Medical Coll., St. Louis	1902	88.5
262	E.	Eclectic Medical Institute	1902	78.8
258	E.	Eclectic Medical Institute	1902	86.8
255	E.	Eclectic Medical Institute	1902	90.0
223	R.	Coll. of Phys. and Surgs., New York	1902	93.4
230	R.	Hospital College of Med., Louisville	1902	90.4
235	R.	Hospital College of Med., Louisville	1902	92.4
238	R.	Hospital College of Med., Louisville	1902	90.4
273	R.	Hospital College of Med., Louisville	1902	91.0
280	R.	Hospital College of Med., Louisville	1902	85.3
284	R.	Hospital College of Med., Louisville	1902	86.5
239	R.	University of Michigan	1902	91.1
241	R.	University of Michigan	1902	87.3
234	R.	University of Michigan	1902	90.4
242	H.	University of Michigan	1902	87.2
240	R.	Medical College of Fort Wayne	1902	90.5
263	R.	University of Virginia	1900	78.0
269	E.	Bennett Medical College	1902	88.8
261	R.	Keokuk Medical College	1902	88.4
248	R.	Western Pennsylvania Medical College	1888	83.7
250	R.	Boston University	1901	90.4

FAILED.

Candi- date.	Sch. of Pract.	College.	Year Grad.	Per- cent.
256	R.	Kentucky School of Medicine	1901	*69.5
285	E.	Eclectic Medical Institute	1881	†
231	R.	Cincinnati College of Med. and Surg.	1890	59.2
243	R.	Barnes Medical College	1902	†
244	R.	Royal University, Budapest	1900	†
286	H.	Hahnemann Medical College, Chicago	1900	†

* Third examination. † Incomplete.

Married.

John L. Gish, M.D., to Miss Anna Hill, both of South Bend, Ind., August 23.

Henry S. Bennett, M.D., to Miss Helen Crossman, both of Moline, Ill., September 4.

Asa B. Leinbaugh, M.D., to Miss Laura D. Sauer, both of Bellevue, Ohio, August 20.

Mary Paulsell, M.D., to H. W. Mitchell, M.D., both of Danvers, Mass., August 16.

Frank Kendig, M.D., Chicago, to Miss Minnie Valeria Tyre of Lebanon, Ind., September 3.

George De Tarnowsky, M.D., Nice, France, to Miss Bertha Nixon of Chicago, September 3.

Robert H. Eames, M.D., Taylor, Texas, to Miss Florence Hill of Austin, Texas, August 12.

Louis Kolipinski, M.D., to Miss Ella Mercedes Soehngen, both of Washington, D. C., August 20.

Francis F. Grillet, M.D., Farwell, Mich., to Miss Mary H. Stuart, at Grand Rapids, Mich., August 20.

William Foster, Jr., M.D., Princeton, N. J., to Miss Helen Dunham Stewart of Warren, Ohio, September 3.

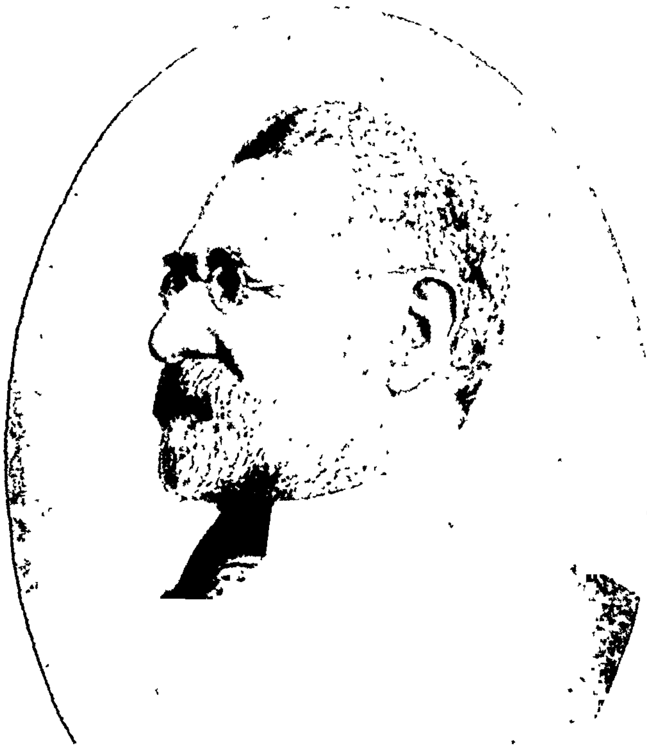
Deaths and Obituaries.

Aaron Friedenwald, M.D.

Dr. Aaron Friedenwald died at Baltimore, August 26, from the effects of an operation undertaken for the relief of cancer of the stomach, aged 65. He had suffered from gastric symptoms for some months past. Early in May he went to Europe, and, August 1, the diagnosis of carcinoma was made. Dr. Friedenwald at once returned to Baltimore. August 20 an operation revealed such extensive involvement of the structures about the pylorus as to make only a gastro-enterostomy possible. The operation was concluded with satisfaction and hopes were entertained that he would recover from it. But vomiting set in, with uncontrollable hiccough, and he died six days later.

Dr. Friedenwald held a high rank in the medical profession of this country. He was born in Baltimore, Dec. 20, 1836. He obtained his medical degree at the University of Maryland in 1860, and was a student in the office of Prof. Nathan R. Smith. He then spent two years in Germany preparing himself under Von Graefe and other great specialists in Berlin, Vienna, Prague and Paris for the practice of his chosen specialty. Returning to Baltimore he entered upon practice as an ophthalmologist and otologist, which he continued up to the time of his last illness. In 1873 he became a member of the faculty of the College of Physicians and Surgeons, and was always one of its most steadfast supporters. To him in very great degree the college owed its success. He also held the position of treasurer and chairman of the executive committee of the institution for many years.

Dr. Friedenwald was a public-spirited physician and took an active part in professional and civic work. He was a member of the American Medical Association; a member, and in 1889-1890, president of the Medical and Chirurgical Faculty of Maryland; first president of the Maryland Ophthalmological Society. It was on his motion, as a representative of the College of Physicians and Surgeons, that the Association of Baltimore Medical Colleges, in 1890, became a national organization at Nashville. He was a frequent contributor to the medical journals and to the proceedings of medical societies.



DR. AARON FRIEDENWALD.

Andrew M. Armstrong. M.D. Willoughby Medical College, Fairfield, N. Y., 1832, one of the oldest physicians in Ohio, died at his home in Doylestown, August 21, aged 94. Dr. Armstrong located in Doylestown in 1837, and practiced his profession there for over sixty years. In 1880 he was elected to the state legislature, serving two terms.

Ellis Clarence Garee, M.D. College of Physicians and Surgeons, Baltimore, 1890, died at Baltimore, from typhoid fever, August 30, aged 41. He was a health warden of the city and president of the Southwest Baltimore Improvement Association.

George Whitfield Kemper, M.D. University of Pennsylvania, Philadelphia, 1836, died at Madison Hall, Port Republic, Va., August 19, aged 87. He had practiced in Rockingham County continuously for sixty years.

Edward N. Riggs, M.D. Cincinnati College of Medicine and Surgery, 1874, died at his home in Bridgeport, from the effects of a self-inflicted gunshot wound of the head, August 21, aged 57.

Philip Shaffer, M.D. Rush Medical College, Chicago, 1864, died at his home in North Manchester, Ind., August 22, after an illness of several months.

Frank J. Seabourne, M.D. Medico-Chirurgical College, Philadelphia, 1899, died, August 17, at his home in Bordentown, N. J., aged 33.

Jacob K. Hecker, Jr., M.D. Medico-Chirurgical College, Philadelphia, 1901, died at his home in Philadelphia, August 13, aged 27.

Miscellany.

No physician can afford to be indifferent regarding the accurate filling of his prescription.—*St. Paul Medical Journal.*

Tests of Uric Acid Solvents by Solubility of Their Urates.—Vicario reports in the *Gaz. des Hop. de Toulouse*, No. 22, that assuming the efficacy of a uric acid solvent to be proportional to the solubility of the urate which it forms, lycetol takes the highest place, lysidin second, while piperazin and urotropin came third in his tests. They were followed in turn by potassium bicarbonate, lithium carbonate and sodium bicarbonate. Lycetol is the tartrate of dimethylpiperazin.

A Remarkable Case of Fecundity.—"At the present time when so many medical writers are deploring the fact that so large a proportion of our native women refuse to bear children, it might be well to record the case of one who has done more than her share of duty toward the state." Thus speaks the *Medical Age* and tells of an intelligent American-born woman of 43, who was married at 13, and in these 30 years has borne 24 children, of whom 20 are living. The question arises: Are these children all of such health and character that the birth and rearing of each was really a service to the state?

Opium Eating in Hawaii.—Hawaii is said to be a paradise for the opium eater. Nowhere else is its sale so unrestricted or its use so widespread as in this territory since its annexation. Under the provisional government opium was in the sole control of the Board of Health. After annexation these laws were declared obsolete, and, according to the *Boston Transcript*, there is no restriction now as to the use of the drug or its sale. Nearly as much of the drug is taken to the islands as to the entire United States. An effort is to be made to enact some law against its use which will stand in the courts.—*American Medicine.*

Treatment of Lupus by Potassium Permanganate.—A recent Paris thesis states that Hallopeau has been very successful since 1900 in treating lupus with permanganate. He applies it as a powder on non-ulcerated lupus after washing the patches with soap and drying. He covers with dry cotton and leaves it for 15 minutes. He then rinses it off with warm water and applies a wet compress. A single application is usually sufficient, if not it can be repeated after an interval of a few days to allow healing and cicatrization. He sometimes uses a 1/50 solution, applying it on a compress and covering with oiled silk for 15 minutes. It is then rinsed off and replaced by a wet compress. This is repeated every day until cure is complete. The solution is not painful but the powder causes slight smarting, and in two cases the pain was severe until cocain or chloral was applied.

Meat-Juice and Marking Ink.—Of all places in the world a hospital for the sick should be administered with rigid attention to detail and order. That such is not always the case is abundantly shown by the reports of the coroners' courts. Hardly a week elapses without the tale of some death in a public institution of the kind due to gross negligence and want of method. Not very long ago we commented severely upon the carelessness which allowed strong carbolic acid to be left lying about in a ginger-beer bottle at one of our leading London hospitals. The result was the death of a workman who took a pull at the bottle under the impression it contained some harmless beverage. The latest scandal of the kind comes from the fever hospital near Bromsgrove, where marking ink was given in mistake for meat juice to two scarlet fever patients. Will it be believed that in a public hospital marking ink was habitually kept in a meat juice phial and left where it could be administered to a patient! It is all very well for a hospital committee, wise after the event, gravely to censure a nurse for stowing away the marking ink along with medicines and food. The fault lies with the system, or lack of system, that allows marking ink to be placed in any but a properly labeled and distinctive bottle of its own. Most marking inks are poisonous. It would be interesting to know what are the ward regulations at the Bromsgrove Infectious Hospital regarding poison bottles and poison cupboards; or do the dispensers utilize odd bottles and phials for all poisons needed in the wards?—*Med. Press* (London).

The Food of the Infant.—It is all very well to say that an infant shall be fed day after day, week after week, month after month, a certain definite amount of food of a certain exact composition, at times regulated by the clock. . . . On the other hand, the perfectly healthy growing child should be allowed some choice as to the quantity, time and quality of its food. In the first place, the child should be satisfied after taking its bottle, so that the quantity should be somewhat adjusted by the capacity of the child's stomach. An excess in quantity is very soon indicated by regurgitation. The strength of the milk should be frequently increased, so that the child shall take the strongest milk that it can comfortably digest, and if a child is restless and hungry before the set time is up anticipation of the time of feeding will often save a nervous strain and consequent sleeplessness and restlessness, and so be a blessing to everybody. I not infrequently see children who are perfectly healthy, and yet are a burden to their whole family connection on account of sleeplessness and restlessness, when the entire trouble is that the children do not get enough to eat. They are being fed according to some very strict system, and they have probably outgrown the formula used for the modification of the milk. They are not getting enough to satisfy them, and the feedings are separated by a period of perhaps four hours, which is about the limit that any baby will stand. Let these children gorge themselves a few times with a large quantity of good food, even if they do regurgitate a little, and they will then have a few good sleeps, and the whole picture will change.—Bishop in *Medical Critic*.

Prophylaxis and Treatment of Affections of the Biliary Passages.—W. N. Clemm of Darmstadt states that the main point in prophylaxis is to maintain an almost continuous flow of bile by taking the food in such a way as to elicit a constant production. In case there is any stoppage of bile, the flow should be restored by energetic deep breathing, light massage or the rolling of the ball proposed by Rose and others for chronic constipation. All catarrhal gastrointestinal affections should be thoroughly treated. A glass or two of milk should be taken before rising in case of the slightest suspicion of stoppage of the flow of bile. While dressing, one or two cups of very hot physiologic salt solution should be sipped, and after exercises in deep breathing, a twenty to thirty minutes' walk in the open air should follow. There should not be more than two or two and a half hours' interval between meals, with milk between at least twice, and the deep breathing exercises should be repeated before dinner and before retiring. The patient should sleep on his left side to promote the flow of bile and the emptying of the large intestine. Abrupt movements should be avoided and the earliest and last meals should be principally albumin and fats. These measures should be supplemented by taking for at least three months at evening and morning and, during an attack, also at noon, .75 gm. of sodium oleate in solution, not pills, with or without tincture of valerian or validol. The sodium oleate or eunatrol has a cholagogue action and softens the gallstones and dissolves cholestearin. During a severe attack he advises Carlsbad water as hot as it can be sipped, taken every ten to fifteen minutes up to six or eight glasses, supplemented by flaxseed poultices to the region, while the patient reclines for three hours morning and afternoon.—From *Wiener Med. Presse*.

Clippings from Lay Exchanges.

THE NEWS FROM WATER VALLEY.

"We are glad to state that Mrs. Beulah Hutcherson is improving slowly, she has been confined to her room for eight weeks with Dr. Walker her attending physician.

"Mr. Ab Roach is still very feeble and not able to sit up, many are having chills.

"Mrs. Mary Booker is also very sick, she has been confined to her room for some months and is gradually growing weaker each day.

"Dr. Arnold is now making his home at Water Valley, he seems to be a very prominent young physician. The death angel visited the home of Mr. James Jones the 11th and called him away from his wife and three children. Mr. Jones has been for some time a victim to that great disease consumption, a week before he died he had an attack of meningetis and suffered oh so much, but we would say to his friends and relatives that we trust his sufferings are over for he seemed to be reconciled to die, said he was ready; what a blessed thought. Grieve not dear friends as your loss is his gain. He was buried at Finch Graveyard near Alexander with Brother Hensley and Gray conducting the funeral service, there was a very large crowd in attendance.

"Professor Beasley has moved to Etna Furnace, and is practicing medicine there, the people were very much disappointed in regard to his quiting his school so early as he only taught one month."—*Columbia* (Tenn.) *Democrat*, May 16, 1901.

REMARKABLE OPERATIONS.

"Eyes Removed from the Head, Washed and Restored to their Place—Sight Followed.—Toledo, O., April 17—Two remarkable operations on eyes were performed at St. Vincent's hospital. M——'s eyes had been destroyed in an explosion of gunpowder about 12 years ago, and since that time he has been totally blind. The physicians yesterday removed the blind eyes from their sockets, rubbed them, cut off a scum that had accumulated, and replaced them in their sockets.

"M—— blinked for a few seconds, rubbed his eyes and to the astonishment of everybody present, announced that he could see as well as he did before his eysight was destroyed. The physicians tested him for a few minutes in regard to color, and gave him knot of spun wool in varied hues to make comparisons and selections from, and he did so without a mistake. After the tests the physicians darkened the eyes so that the light might not destroy them.

"Another equally as startling an operation was that on P. F. W.'s 16-moths-old baby, which was born blind. The same physicians removed the eyes of the child, cleaned them, cut off a scum that resembled the shell of a nut, and then replaced the eyes. To the surprise of everybody the child began to observe things."—*Newark* (Ohio) *Tribune*, April 17, 1902.

A METALLIC SURGEON.

"Tom V—— of Mattoon was in the city Tuesday. Mr. V—— is manufacturing an aluminum surgeon's chair that is meeting with great sales. . . ."—*Greenup* (Ill.) *Press*, March 13, 1902.

TUBERCULOSIS AND PHTHISIS.

"Tuberculosis of the lungs carried off twenty-five of the victims of disease last month. Seven others died of tuberculosis and four of phthisis."—*Los Angeles* (Cal.) *Express*, Aug. 6, 1902.

GASTRONOMIC SURGERY.

"Dr. ——, who has been in Touro Infirmary for some time, being treated for cancer of the stomach, has been gradually getting worse. . . . It is feared that the patient will die under the knife, but it has been decided to attempt the operation as a last resort.

"This is a most interesting case from a scientific point of view, as the result may revolutionize gastronomic surgery."—*New Orleans* (La.) *Picayune*, Sept. 14, 1901.

LAPAROTOMY OF THE INTESTINES.

"The annual meeting of the New London County Medical Association was held Thursday afternoon. . . . Dr. —— of Norwich followed with a paper describing his now famous operation of laparotomy of the intestines."—*Norwich* (Conn.) *Bulletin*, April 4, 1902.

A WARNING TO CACHINNATORS.

"Westville, Ind., man rips his lining while cachinnating and condition is serious. La Porte, Ind., Dec. 6.—(Special.)—If

—— of Westville, this county, recovers he will eschew laughing. Yesterday his risibilities were affected to such an extent that he laughed so hard the inner membranes were torn loose from his lower ribs, according to the claims of the attending physician."—*Chicago Tribune*, Dec. 7, 1901.

WAS HE A SURGEON?

"Dr. ——, one of Huntsville's oldest citizens, died last evening at ten minutes past seven o'clock after suffering about two weeks with paralysis of the brain. . . . For many years he was one of the leading butchers of Huntsville, but during recent years he has spent his time in retirement."—*Huntsville* (Ala.) *Mercury*, Aug. 8, 1902.

CYSTED ABDOMIAL ABSCESS REMOVED.

"Monday, Drs. —— of Vincennes and —— of this city performed a delicate surgical operation on —— in this city. Six months ago —— was injured in the abdomial regions from which a cysted abscess formed. The physicians above mentioned made an incision and removed a large abscess almost the size of a gallon vessel."—*Lawrenceville* (Ind.) *Republican*.

DID SHE CATCH THE CAR?

"B. —— entered suit against Dr. —— for $50,000 damages. . . . She alleges the defendant was called to her home, December 19, 1900, to attend her and that he carelessly and negligently treated her, and then abandoned her while she was suffering great agony to catch a car."—*Pittsburg* (Pa.) *Dispatch*, Nov. 16, 1901.

(To be continued.)

Societies.

COMING MEETINGS.

Wyoming State Medical Society, Cheyenne, Sept. 9-10, 1902.
Medical Society of the State of Pennsylvania, Allentown, Sept 16-18, 1902.
American Association of Obstetricians and Gynecologists, Washington, D. C., Sept. 16-18, 1902.
Medical Society of the Missouri Valley, Sioux City, Iowa, Sept 18, 1902.
American Dermatological Association, Boston, Sept. 18-20, 1902.
American Academy of Railway Surgeons, Kansas City, Mo., Oct. 2-3, 1902.
Medical Association of District of Columbia, Washington, Oct. 7, 1902.
Idaho State Medical Society, Moscow, Oct. 9-10, 1902.
Vermont State Medical Society, Burlington, Oct. 9-10, 1902.
Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

Woodford County (Ky.) Medical Society.—This society was organized at Versailles, August 15, with the following officers: Dr. John C. Lowry, Troy, *president*, and Dr. William C. McCauley, Versailles, secretary.

St. Louis Medical Society of Missouri.—The committee on Osler memorial address announces that Prof. William Osler of Johns Hopkins University, Baltimore, will deliver a memorial address on "William Beaumont, the First and Greatest American Physiologist," October 4.

Mississippi County (Ark.) Medical Society.—This society was reorganized last month, under the new constitution and by-laws, required by the American Medical Association, through Arkansas State Medical Society, and is officered as follows: Dr. Thomas G. Brewer, Osceola, president; Dr. Charles A. Turner, Osceola, vice-president; Dr. H. Clay Dunavant, Osceola, treasurer, and Dr. George A. Hennings, Butler, secretary.

Prince Edward Island Medical Society.—The annual meeting of this society was held at Charlottetown, July 9. After the general business was transacted, the society adjourned in order to attend the meetings of the Maritime Medical Association, which were being held at the same time and place. Dr. Frederick F. Kelly was elected president; Dr. Peter Conroy secretary, and Dr. Robert B. Shaw treasurer, all of Charlottetown.

International Surgical Association.—The approaching congress of the Belgian Surgical Society to be held at Brussels September 8, is to be distinguished by an earnest effort to organize an international surgical association. Dr. C. Willems, the president of the congress, is the prime mover in the matter. One of the aims of the international association is to establish a uniform outline for the study of the most important questions in surgery and to discuss them on a common basis.

French Medical Society of North America.—The first meeting of the French Medical Society of North America at Quebec, June 25 to 27, was mentioned in this column August 23. The next meeting is to be held in Montreal in 1905, under the following officers: President, Dr. A. Achille Foucher, Montreal; vice-presidents, Drs. Michael J. Ahern, Quebec; A. Wilfred Petit, Nashua, N. H., and Dr. Edward H. Rouleau, Calgary, N. W. T., and general secretary, Dr. Lesage, Montreal.

International Congress for the Care of the Insane.—This congress, now in session at Antwerp, is discussing the questions of the care of the insane at home and in institutions; which classes of insane belong in institutions; the scientific and economic fundamentals of the organization of official colonies and institutions for the insane, are the reasons for organizing new colonies, and the best means of founding and establishing such. Dr. F. Sano, rue Montebello 4, Antwerp, Belgium, is the secretary of the congress.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Granular Conjunctivitis.

B. Melconian, according to an abstract in Amer. Med., states that an application of a solution of iodin produces more satisfactory results in granular conjunctivitis than any other medication. He recommends the following:

℞.	Metallic iodi	gr. i	|06
	Liq. vaselini	℥i	30|

M. Sig.: To be used locally.

The foregoing solution may be modified to suit the case. In acute cases or in young individuals, the quantity of iodin should be reduced one-half. The affected eyes should *first* be cleaned with a tampon dipped in a boric acid solution. The lids should then be turned and the iodin applied to the granular areas by means of the end of the finger in order that light massage may be given to the lid at the same time. The lids should then be kept closed for five or ten minutes and protected from dust and strong light. This treatment should be repeated morning and evening and in the middle of the day one or two drops of the solution should be instilled into each eye as a collyrium, which may be *followed by light massage* over the closed lids. The author states that immediately after the *treatment* the eyes become red, there is lachrymation and some photophobia. These symptoms disappear in from one-half to one hour, as a rule. In some cases, however, the symptoms persist for several days. In such cases the treatment should be begun with a 1 per cent. ointment of yellow mercuric oxid. This treatment, he states, should be continued for three to six months.

Dropsy Due to Heart Disease.

According to the *Cyc. of Med.* digitalis is contraindicated in marked atheroma of the blood vessels, aneurism, apoplexy and other states of arterial excitement and in gastric irritation. The following *combination is, however, recommended* in dropsical conditions caused by an incompetent right heart:

℞.	Tinct. digitalis	ʒi	4
	Tinct. scillæ	ʒii	8
	Spts. juniperis co.		
	Pot. acetatis, āā	ʒiv	16
	Vini albi q. s. ad	℥vi	180

M. *Sig.: One tablespoonful three or four times a day;* or:

℞.	Pulv. digitalis		
	Pulv. scillæ, āā	ʒss	2
	Pot. nitratis	ʒi	4

M. Ft. pil. No. xxx. Sig.: One pill three times a day.

Prostatic Disease.

J. H. Dowd, in an abstract in *Med. Standard*, has introduced a new psychyrophore for the direct application of hot water to the prostate gland through the rectum. The instrument has a collar of hard rubber where it is grasped by the sphincter, thus making it a non-conductor of heat and making it possible to use much hotter water. Although pure water alone may be used, it is better to use the normal saline solution at a temperature of 100 to 110 F. To promote absorption of the inflammatory exudate the author recommends the use of the following suppository, to be inserted as soon as the tube is withdrawn.

R.	Ichthyol	gtt. ii	12
	Ext. belladonnæ	gr. ¼	015
	Ext. hyoscyami		
	Pot. iodidi. āā	gr. i	06

M. Ft. suppos. No. i. Sig.: To be inserted as directed.

Hemorrhages in Infectious Diseases.

Roger, in *Jour. des Praticiens*, as noted by *Amer. Med.*, states that in hemorrhages from the lungs and kidneys during the infectious diseases, the patient should be immobilized and bathing discontinued. If the patient is restless, delirious or if there is much cough he should be calmed by opiates. Following these precautions, acid drinks such as citric or sulphuric lemonade are often prescribed to increase the coagulability of the blood. The following has been used in hemorrhagic smallpox:

℞.	Acidi sulphurici		
	Alcoholis, āā	ʒss	2
	Syrupi	℥iii	90
	Aq. destil.	℥xiii	390

M. Sig.: To be used as a drink.

Calcium chlorid has, in some cases, given good results. This preparation, however, can not be employed hypodermically as it causes sloughing and eschars. The author prescribes it in doses of one dram daily, which is usually sufficient to control the hemorrhages, although the dose may be increased to three drams daily. He recommends it in the following form:

℞.	Calcii chloridi (crys.)	ʒi-iss	4-6
	Rum	℥i	30
	Tinct. cinnamomi	ʒi	4
	Aq. destil.	℥ii	60

M. Sig.: To be taken, during twenty-four hours, in divided doses. The alcohol should be omitted if lesion of the kidney exists. In hemorrhagic nephritis the hematuria disappears rapidly in two or three days. When the source of hemorrhage is accessible, very hot or very cold applications may be employed. Hemorrhages from the mucous membranes may be arrested by the application of antipyrin, which produces local constriction. Alum, tannin and rhatany are the astringents usually employed. *According to his statement*, Carnot has had good results from the use of the following in vaginal and nasal hemorrhages:

℞.	Gelatin (white)			
	Sodii chloridi, āā	ʒiiss	10	
	Hydrarg. bichlor.	gr. viiss		50
	Aq. destil.	℥iiiss	105	

M. Sig.: *Apply locally.*

Continuous Vomiting of Pregnancy.

M. R. Condamin, in *Indian Med. Record*, advises absolute rest of the stomach with complete suppression of all liquid and solid nourishment for eight or ten days. During this time three or four quarts of artificial serum are injected daily, preferably into the rectum. If intolerance should appear on the part of the rectum a few drops of laudanum may be added to the serum, or it may be administered subcutaneously. About the tenth day a few swallows of liquid food may be allowed, and the ordinary diet may be gradually resumed. The author reports one typical case, and believes that many cases may be carried to term in this way, in which, otherwise, abortion would result or would have to be induced.

Dietetic Treatment of Summer Diarrhea.

Dr. L. Fischer, in *Med. Record*, states that it is frequently necessary to stop milk feeding in cases of diarrhea of children or in the presence of fever or gastroenteric disorders. In such cases the author recommends for temporary use when vomiting or diarrhea persists either barley water, four ounces, or oatmeal water, four ounces, to be given every two or three hours. The feeding may be sweetened with granulated sugar half a teaspoonful to each bottle, or if fermentation is present as demonstrated by colic, eructations or green stools, half a grain of saccharin may be substituted for the sugar. To make barley water, Dr. Fischer recommends one tablespoonful of ground barley flour be added to one pint of water. This should be boiled for half to one hour, strained and enough water added to make a pint of barley water. If constipation should follow the use of the barley water, one teaspoonful of glycerin added to each teacupful of barley water will make it more palatable and will usually correct the constipation. Oatmeal water may be prepared in the same way as barley water. In cases where the child is underfed the white or yolk of a raw egg, well beaten, may be added temporarily. Whey feeding is necessary in some cases. His formula for making whey is as follows: Take a half pint of fresh milk heated luke warm (115 F.) and add one teaspoonful of essence of pepsin and stir slightly. Pour into custard cups and let it stand until it curdles; then beat with a fork until the curd is finely divided and strain. The whey may be administered as follows: For an infant under six months:

Whey, ℥ii; milk, ℥i.

Warm to 100 F. for three minutes and feed. This amount may be given every two or two and one-half hours.

For a child two to four months old:

Whey, ℥ii; milk, ℥ii.

Sig.: To be given every three hours. If this is well borne, it can gradually be increased to two and a half ounces of each. Or if the child appears hungry after feeding three ounces of each may be given once in three hours. The author states that some infants three months old can easily take six ounces of food. The weight should be noted, and if the child does not thrive properly the amount of milk may be increased and the whey decreased.

Infantile Diarrhea.

The following is recommended by H. C. Hahn in *Jour. des. Pract.* in the treatment of diarrhea of infancy:

℞.	Tinct. iodi	gtt. x-xv	65-1.
	Syr. simp.	℥ss	15
	Aq. destil. q. s. ad	℥v	150

M. Sig.: One teaspoonful every two hours.

Neuralgia.

The following combination is recommended by *Prog. Medical* in the treatment of neuralgia:

℞.	Ext. hyoscyami		
	Ext. cannabis ind.		
	Pulv. aconiti rad.		
	Pulv. belladonnæ rad., āā	gr. 1/3	02

M. pilula No. i. Sig.: One to three such pills daily.

Medicolegal.

Waiver of Privilege by Applicant for Insurance.—Where an insured, *on behalf of himself and those claiming an* interest in the policy, waived the provisions of law forbidding any physician or surgeon from disclosing *information* acquired while attending him in a professional capacity, the Court of Appeals at St. Louis holds, in Keller vs. Home Life Insurance Company, that such waiver was binding on the beneficiary in a suit on the policy, and that it was error for the trial court, in this case, to exclude testimony concerning the state of health of the insured by physicians who attended him shortly before his application. It is settled law, the court says, that a patient may waive for himself the protection of secrecy imposed by the Missouri statute (section 4659 of the Revised Statutes of 1899) on the physician or surgeon who attends the patient in a professional capacity, touching the disclosure of facts acquired by the former in that intimate relation. And if the patient himself may make such a waiver in advance, as seems in accord with principle, the court says that it does not see why he may not make such a waiver an element of his contract of insurance, and, having done so, the waiver will be binding on all who come within its terms. In other words, such a waiver may be made in advance, as in this instance, so as to be binding on a beneficiary of the contract other than the party making the waiver.

Appeal from Decision of Board of Medical Examiners.—The Supreme Court of Montana says, in State ex rel. Riddell and others, State Board of Medical Examiners, vs. District Court, that it was urged that a notice of an appeal to the District Court from a decision of the board should have been entitled by the name of the party appealing vs. The Board of Medical Examiners of the State of Montana, and that not being so entitled, it was not sufficient to give the District Court jurisdiction of the appeal. But the Supreme Court holds that there was no merit in this contention. It says that section 1892 of the Code of Civil Procedure provides, "An affidavit, notice or other paper, without the title of the action or proceeding in which it is made or with a defective title, is as valid and effectual for any purpose as if duly entitled, if it intelligibly refer to such action or proceeding." Though the proceeding on the appeal in such cases as that under consideration is not properly an action, in the strict sense of the term, but a special proceeding, it should, perhaps, have been entitled as contended; yet the failure of the clerk to so entitle it did not affect the merits of the controversy. Then it did not appear whether the board was represented at the trial. However, this was of no moment, the Supreme Court says, the notice in the case having been sufficient to meet the requirements of the statute. It contained intelligible reference to the decision of the board, by which the party appealing felt aggrieved, and his purpose to appeal therefrom. That the board allowed the appeal to go by default, if such be the fact, did not affect the case. Furthermore, upon the theory that the board was the person aggrieved by the action of the District Court in reversing the action of the board and declaring the applicant entitled to a certificate, the proper course to be pursued by it was to appeal to the Supreme Court from the judgment, as provided in the statute, or to move for a new trial. Under the statute no formal pleadings are required. Wherefore, the district had jurisdiction of the appeal from the board, and to render the particular judgment stated, and the board's application for a writ of certiorari must be denied.

Failure to Introduce X-Ray or Expert Evidence.—According to the fourth appellate division of the Supreme Court of New York, the party suing in the personal injury case of Kane vs. the Rochester Railway Company testified or gave evidence tending to show that his side was injured in such manner that a hernia resulted; that three fingers of the left hand and two of the right were put out of joint, and that his wrist was seriously injured, constantly pained and troubled him, and was in such condition at the time of the trial, two years after the accident, that he had to keep a leather bandage constantly around it when at work, stating that he could not use the wrist in his work without such bandage, which was exhibited to the jury. There was a sharp controversy between the medical experts as to whether or not any hernia existed; but they all agreed that at the time of the trial there were no objective symptoms of injury to the fingers or wrists that would account for the weakness and pain complained of and testified to by the party suing, and that, if there was any difficulty with the bones, an *x*-ray examination would disclose it. Upon the cross-examination of the party suing, it appeared that a certain physician made an *x*-ray examination of his wrist and fingers, and the physician, who was called by the party as a witness, testified upon his cross-examination that he did make such examination, and that he took *x*-ray photographs of the same, and that he then had such photographs, or the plates, in his possession; that he made the examination and took the photographs in December, 1899, or January, 1900. The accident occurred June 25, 1899. The party's counsel did not ask him or the physician what the *x*-ray examination disclosed as to the condition of the fingers or wrist, nor offer to produce the photographs showing their condition. The court holds that it was reversible error not to give a requested instruction to the jury substantially to the effect that, it appearing that the physician made an *x*-ray examination of the party's fingers and wrist, at his request, and the party having omitted to ask the physician, when called to the witness stand by him, what he discovered from such examination, the jury had the right to assume that the physician's testimony, if given, would have been adverse to the party upon that point. The court says that it was no answer that the company called out the fact that the *x*-ray examination had been made, and might have asked what the result of such examination was. It was not called upon to take the chances of an answer by a hostile witness. It was not bound to prove its defense by the other party's expert physician, who, at such party's request, made a careful examination of the injured parts to ascertain the extent of their injury; and the burden was upon the party suing not only to produce him, but also to interrogate him as to facts within his knowledge relating to the important issue, or expose himself to the hazard of unfavorable inferences. A party seeking to recover for serious injury to his side and wrist ought not to be permitted to call as a witness an expert physician, who at his request examined and learned the condition of both, and interrogate him only as to the condition of one, without exposing himself to the hazard of having the jury infer that, if the witness had been asked as to the condition of the other, his answer would have been unfavorable to the party calling such witness.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

American Medicine (Philadelphia), August 23.

1 *Prognosis and Treatment of Chronic Nephritis. DeLancey Rochester.
2 *On the Influence of the Contents of the Large Intestine upon Strychnin. William Salant.
3 Are Not Some Deaths During Operation in Region Supplied by Trifacial Nerve Due to Reflex Inhibition of Respiration and of the Heart. William H. Good.
4 *Angina Pectoris. Jay Perkins.
5 Tuberculosis: Its Transmission and Prevention. Henry D. Holton.
6 The Importance of Proper Temperature in the Administration of Salt Solution: An Accurate Method of Determining Temperature. R. C. Coffey.
7 Skin Grafting: A New Method. S. T. Rucker.
8 Essentials of an Adequate System of State Care and Supervision for the Insane. Frederick Peterson.
9 The Pirogoff Museum, St. Petersburg. Nicholas Senn.

Medical News (N. Y.), August 23.

10 *Some Points in the Treatment of Acute Rheumatism. W. H. Thomson.
11 *The Symptomatology and Diagnosis of Acute Articular Rheumatism. Leonard Weber.
12 *On the Pathogenesis of Acute Articular Rheumatism. Heinrich Stern.
13 The Complications and Sequelæ of Acute Croupous Pneumonia. H. A. Hare and Arthur Dare.

Medical Record (N. Y.), August 23.

14 *When and Why Does Labor Begin? George P. Shears.
15 *Some Varieties of Surgical Tuberculosis, with Special Reference to a New Method of Treatment. L. F. Garrigues.
16 Primary Carcinoma of the Vermiform Appendix. D. S. D. Jessup.
17 The Venous System of the Temporal Bone and Its Relation to the Complications of Mastoid Disease. Seymour Oppenheimer.
18 A Case of Epithelioma of the Margin of the Eyelid Apparently Cured by the Use of a Solution of Adrenalin Chlorid. Wilbur B. Marple.
19 Summer Diarrhea in Infants and Young Children. Martin J. Synnott.

Boston Medical and Surgical Journal, August 21.

20 *Vaccination and Smallpox—The Preparation of Animal Vaccine. Theobald Smith.
21 Vaccination: The Technique. Eugene A. Darling.
22 Vaccinations: Accidents and Untoward Effects. John H. McCollom.
23 *Smallpox: Its Diagnosis. John T. Bullard.

New York Medical Journal, August 23.

24 *Gas Leakage and the Public Health. James C. Bayles.
25 Clinical Cases of Gas Poisoning. Samuel Lloyd.
26 A Consultation with Professor Dieulafoy on Appendicitis. Edmund L. Gros.
27 Gastric Acidity. L. H. Watson.

28 A Method of Preserving Gross Specimens for Museum and Class Demonstration. W. H. Watters.
29 Observations on the Anatomy, Physiology and Pathology of the Normal Sacculi Ani, and on the Etiology, Pathogenesis, and Diagnosis of the Abnormal Anorectal Pouches, Especially Those Described and Treated by the Late Eminent Dr. Physick. William Bodenhamer.
30 *The Treatment of Hemorrholds by Enucleation. George B. Evans.
31 Report of a Case of Successful Removal of a Kidney for Intermittent Hydronephrosis. J. B. Boucher.

Philadelphia Medical Journal, August 23.

32 Yellow Fever. Frank H. Hancock.
33 The Etiology and Diagnosis of Fractures in the NewBorn. W. Reynolds Wilson.
34 Unusual Complications Supervening in a Simple Extirpation of a Multilocular Cyst of the Ovary. Burdett A. Terrett.
35 Rectal Stricture, with Remarks on Electrical Treatment. Walter H. White.

St. Louis Medical Review, August 23.

36 Extirpation of the Larynx for Carcinoma; Presentation of a Case, with Specimen. H. L. Nietert.
37 Bacteriologic Findings in a Fatal Case of Tetanus Complicating Vaccination. R. B. H. Gradwohl.

Cincinnati Lancet-Clinic, August 23.

38 Professional Honesty. E. Stuver.
39 *Gonorrheal Hemorrholds. George J. Monroe.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), July.

40 The Organization of the Medical Profession as It Relates to Counties. Delos L. Parker.
41 Post-Operative Intestinal Obstruction. Frank B. Walker.
42 Case of Injury to the Ureter, and a Case of Injury to the Bladder, Each Complicating Laparotomy for Removal of Bilateral Pus-Tubes. Thomas S. Burr.
43 Suppurative Parotitis Following Removal of Pus-Tubes. William H. Morley.
44 Report of a Case of Sloughing Intrauterine Fibroid. George R. Pray.
45 Ovariotomy Complicated by Intrapelvic Hemorrhage and Hematoma of the Right Broad Ligament. Reuben Peterson.

Interstate Medical Journal (St. Louis), August.

46 The Therapy of Cancer of the Intestines. J. Hochenegg.
47 Angioma of the Liver—Removal—Wound Treated by the Intraperitoneal Method. C. M. Nicholson.
48 Movable Kidney. T. C. Witherspoon.
49 Full-Correction and Under-Correction of Myopia. Arthur C. H. Friedmann.
50 Factitious Ulcer of the Foot. M. F. Engman.
51 Detachment of the Auricle for the Removal of a Migrant Foreign Body in the Ear. James M. Ball.

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1. **Treatment of Chronic Nephritis.**—The method advocated by Rochester is stimulation of the excretions, the use of the stomach tube and hot-air baths. The technique of such a bath at home is very simple. The patient is placed entirely nude between blankets in bed covered by two extra blankets, and steam or hot air is introduced through a nozzle in the blankets and bed-covering. He reports six cases, several of them treated by hot air or steam baths with benefit, and remarks in regard to the surgical treatment that in progressive signs of kidney degeneration shown by persistent increase in albumin when it should be diminishing, surgical procedure seems worthy of consideration, but as a method of treating true chronic nephritis it is entirely out of place. The prognosis in given cases of chronic nephritis depends on the secreting power that may be developed in the kidney with proper treatment and is also materially affected by the condition of the circulatory apparatus. If the arteries are much diseased and the myocardial nutrition interfered with the prognosis is not good even though we may be able to cause free excretion through the skin and bowel. If there is no decided atrophy of the sweat glands interfering with their hypersecretion the prognosis is not good, and an excessive degree of anemia unimproved by treatment is also of bad signification as well as is the frequent occurrence of marked uremic symptoms. We should not try to stimulate into activity an organ that is inflamed or degenerated, by the use of drugs that excite functional activity of that organ. Therefore, we should rarely have recourse to stimulating diuretics or those which increase the arterial pressure. The diet should be looked after; the chief ingredient should be milk. In acute exacerbations or in uremic states milk should be the only article of food. To aid metabolism exercise is necessary; massage where active exercise is impossible should be employed. The dilution of catabolic materials by drinking large amounts of distilled water or one of the mildly alkaline mineral waters is also advised. When toxemia exists, with defective kidney action, wet cupping of the loins, a full dose of calomel, followed by a saline, and hot-air baths employed once or twice daily, preceded if necessary with a small dose of pilocarpin 0.003 to 0.005 gm. After the bowels have thoroughly moved there should be given hypodermically once or twice a day 500 to 1000 c.c. normal salt solution.

2. **Strychnin.**—In his preliminary communication, Salant has found that strychnin is not detectable in the stomach or intestinal canal of rabbits, and he calls attention to the practical bearing of this fact on its application in the human subject.

4. **Angina Pectoris.**—After reporting five cases, Perkins discusses the general subject, which he considers to be rather a disease entity than a group of symptoms. When its diagnosis is only the placing of the individual case under the proper head of true or pseudo angina, it is somewhat difficult, that is, diagnosing organic lesion from toxic-hysteria or vasomotor disturbances. In two of his cases he has some question whether the latter condition did not exist. The most important thing in the treatment is to search out the cause of the disease, the cause of the attacks and their relief. The iodid of potassium seems to be the most valuable drug given in moderate doses, 10 to 15 grains three times a day, for a long time. During the attack nitroglycerin is best in many cases, but frequently the only drug that will give relief is morphin, and sometimes a great deal of it. If the pain is not soon controlled by this, to avoid the possibility of its sudden overaction on cessation of pain he would use chloroform or ether.

10. **Treatment of Acute Rheumatism.**—Admitting that rheumatism is due to specific bacterial poisoning, Thomson asks what we can do to arrest the growth of the organism. He doubts that the salicylates have such an effect. In very many cases he believes that rheumatism is preceded by tonsillitis through which the microbes get into the system. His own observations would rate this frequency as high as 25 per cent. Much he thinks can be done by proper prophylaxis in this direction. Another fact in acute rheumatism is the development of remarkable sensitiveness of the skin and he ascribes the profuse sweats of this condition to the cutaneous nerves as much as to the presence of the poison in the blood. We should, therefore, treat the skin. All patients with rheumatic fever should be dressed in flannel and lie between blankets from the very first, and extra precautions be taken with the precardial surface for the same reason. He thinks that sedulous attention to the skin would prove a much better preventive of tedious relapses than the dosing with drugs, and as a prophylaxis to susceptible persons he speaks highly of the old Greek custom of daily bodily inunctions, especially of the feet. The alkalies are not curative of rheumatic fever, but an alkaline condition of the blood is a great safeguard against carditis, and they should not be withheld when the least signs of attending heart trouble develops. The anemia caused by rheumatic toxin is *sui generis*, and iron, instead of curing it, is mischievous. Cod liver oil does much better. Small doses of arsenic also sometimes seem to be of use. He has said nothing about the salicylates because they do not need recommendation. He prefers the strontium salt as being the least depressing and of equal efficacy when given in the same dose. In tedious subacute cases it is often advantageous to omit the salicylates altogether and prescribe lemon juice instead.

11. **Symptomatology and Diagnosis of Acute Articular Rheumatism.**—In considering the differential diagnosis, Weber specially mentions first the acute gonorrheal arthritis which may be multiple, but is more often monarticular, caused by the gonococcus and staphylococcus. It does not react upon salicylates, a helpful fact for diagnosis, which is an important point. He thinks it rather frequent, and there may also be a rheumatic arthritis complicating gonorrhea. Septic arthritis, puerperal or otherwise, from streptococcus infection, is generally purulent. The secondary multiple arthritis of acute infectious diseases, scarlatina, dysentery, cerebrospinal meningitis, perhaps also in rare cases of severe syphilis, will be recognized by careful examination of the history of the case. He had a case of multiple neuritis which had a close resemblance to acute rheumatism as far as pain and tenderness in

48 New Method of Approximate Blood Count from Dried Specimens. M. Einhorn and G. L. Laporte (N. Y.)—Eine neue Methode die Blutkörperchenzahl nach Trockenpräparaten annähernd zu bestimmen.
49 Ueber Antipepsin. H. Sachs.
50 Ueber neuere Antihydrotica. J. Loewenbeim. (Critical Review.)
51 (No. 14.) Ueber Bromocoll-Resorbin. R. Ledermann.
52 (No. 15.) Value of Ruhemann's Test for Uric Acid. W. Hanson.—Ueber den klin. Wert der quant. Harnsäurebestimmung nach Ruhemann.
53 (No. 16.) Ueber die Behandlung des Erysipels mit Metakresolanytol. Rosenbaum.
54 Latest Research on Clinical Significance of Acetone, etc. J. Müller.—Neuere Arbeiten über die klin. Bedeutung von Aceton, Acetigessigsäure und beta-Oxybuttersäure.
55 (No. 17.) Die Tuberculose der Chorioidea. R. Greef.
56 (No. 18.) Dumbness in Children. H. Geyzmann.—Ueber die Stummheit der Kinder.
57 (No. 19.) Technic of Saline Transfusion. Schüle.—Zur Technik der Transfusion von physiol. Kochsalzlösung.
58 Recent Progress in Physical Diagnosis of the Heart. A. Hesse. —Ueber die jüngste Fortschritte aus dem Gebiete der phys. Diagnostik des Herzens. (Critical Review.)

Therapeutische Monatshefte (Berlin), July.

59 Application of Camphor in Treatment of Morphin Addiction. J. Hofmann.—Ueber die Anwendung des Kampfers bei Morphin-Entziehung.
60 *Die subcutane Gelatine-Injektionen und ihre Gefahren. Marginer and Hirsch.
61 Prophylaxis of Epidemics from the Standpoint of Physical Science. C. du Bois-Reymond.—Bekämpfung der Seuchen naturwissenschaftlich betrachtet.
62 Beiträge zur Diagnose und Behandlung rheumatische Affectionen. R. Bloch.
63 Noch ein Wort über das Pertussin. A. Model.
64 Relations between Defective Psychic Development and Disturbances in Speech. W. Oltuszewski.—Vom Verhältniss der psych. mangelhaften Entwicklung zu verschiedenen Kategorien der Sprachstörungen. (Concluded from preceding number.)
65 Ueber Diabetes Mellitus. Lenne. (Concluded from preceding number.)
66 *Zur Anwendung des "Anästhesins." C. Kassel.

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6. **Plague as a Soil Infection.**—Farrar remarks that plague is epidemic in certain districts of China. Given two villages not more than 500 yards apart, under precisely the same conditions as to elevation, exposure, etc., one may suffer and the other remain exempt. It is difficult to believe, with the mortality that we have, that plague epidemics remain strictly local, and that in spite of the nomadic habits of the people. The policy successfully adopted in India in dealing with epidemics has been that of evacuation, a policy fully sanctioned by the most enlightened experience. The removal of the inhabitants of an infected town to camps has magical effects. Farrar is inclined to think that the soil becomes infected and that infection takes place largely through going barefoot. Europeans who wear shoes are rarely affected, and this is true not only in regard to the ordinary population, but those who have to do with plague cases. He is, therefore, inclined to think that there is a soil infection and that direct personal contagion of the disease except through pneumonic cases is very rare.

9. **Pulmonary Tuberculosis.**—Latham reviews the treatment of pulmonary tuberculosis, calling attention to the futility of various remedies which have been employed from time to time and the importance of exercise, ventilation, etc., and good feeding, as can be best obtained in a sanatorium where no drugs are used in the routine management of cases, but only to meet complications such as hemorrhage, diarrhea, etc.

11. **Typhoid Inoculation.**—This statistical study by Crombie appears to show that a single inoculation has some protective power, but a double inoculation increases the susceptibility to the disease.

12. **Appendicitis.**—O'Conor insists on certain points: 1. As to the uselessness of allowing local suppuration to take its course in appendicitis. He does not think there is much danger in separating adhesions from the presence of pus; adhesions are only there to meet the conditions, and when these are removed they dissolve of themselves in many cases. He believes in a large incision, three or four inches, in opening appendiceal abscess and in cases of non-purulent appendicitis he makes a two-inch incision, which can be extended if the appendix can not be brought easily to the surface.

15. **Report on Apollinaris Water.**—The Academy passed on in 1868 and admitted Apollinaris water to France as a natural mineral water of a certain composition. The water has changed slightly since then and it is now artificially charged, so the Academy passed a resolution accepting the report of the committee to drop it from the list of natural mineral waters.

16. **Metalloid Iodin in Therapeutics.**—Billet has tried to remedy the fact that iodin in the officinal preparations in benzine, carbon sulphid and chloroform is not in a metalloid state. He endeavored to find some substance to combine with it which would not alter the physical nor chemical properties of the iodin. He found that these conditions were fulfilled by a special petroleum ether composed of pentane and hexane, which distils below 55 C. and boils below 60 C., with a density of 0.628 to 0.630. The solution is stable and the iodin in it retains its natural state and all its bactericidal and antiseptic properties. This ether will dissolve 60 gm. of iodin to the liter. He usually prefers a solution of bi-sublimated iodin, 25 gm. to 1 liter of this petroleum ether distilling below 55 C. This solution has no caustic properties and can even be applied to the face and sprays readily. The ether dissolves the fatty matter in the skin and by its superior osmotic powers penetrates to a remarkable depth and carries the iodin with it. The ether evaporates almost instantly and the iodin is deposited in the form of crystals.

17. **Gelatin in Food as Treatment for Deficient Plasticity of Blood.**—The authors of this article attribute the phenomena of glycosuria, albuminuria and hemophilia to a primary alteration of the blood, entailing some modification of its density, and they suggest as treatment the ingestion of a certain amount of gelatin. It is readily absorbed through the stomach and 15 gm. a day can be taken in this way without inconvenience. It has shown remarkable efficacy in controlling the tendency to hemophilia. In albuminuria and diabetes the effect is transient, that is, it ceases with the suspension of the gelatin, which should therefore be given more or less continuously. Lancereaux welcomes this new utilization of the coagulating and hemostatic properties of gelatin as a valuable contribution to therapeutics, effective while absolutely harmless.

18. **The Eruption at Martinique.**—Kermorgant summarizes the reports presented by the medical officers of the colonial troops at Martinique in regard to the eruption. In Saint Pierre every one was killed, the clothing burned completely off, the limbs detached in many instanes and the skulls burst and empty, the contents expelled through wide cracks. In some of the victims the abdomen had burst while the intestines depended intact. The tissues looked as if they had been burnt by a gas flame. The limbs were in exaggerated flexion, the hands in some of the cadavers twisted back on the forearm and this again on the upper part of the arm, while the head and trunk were almost invariably in actual opisthotonos. About two miles out from the city the victims seemed to have succumbed more to suffocation than to fire. The clothing was not all burned off, and parts of the body were intact. Farther still from the scene of the explosion the lesions were less severe and a large number of the victims were taken on the gunboat Suchet to the military hospital at Fort-de-France. Nine died on the way and thirty-two were received in the hospital. All were intensely excited and suffering such pain that they groaned or screamed constantly, and some complained that they could not swallow and respiration was difficult. The nostrils were obstructed by volcanic mud and patches of it on the skin looked like brown sealing wax after the blisters had broken. Attempts to clean the pharynx brought away debris of exfoliated mucosa. Several who had exhibited symptoms of internal burns succumbed during the night or next day. One native, severely burned, died in intense fever with anuria, another whose feet were burned died from tetanus. A woman with burns of the third degree on the legs and thighs had a temperature of 40 C. after the eschars had fallen, although the wounds were healing perfectly; diarrhea with dysenteriform stools followed and double broncho-pneumonia, but no albuminuria or nervous troubles. She died also. All the wounds were dressed with picric acid, which did not induce any

symptoms of intolerance notwithstanding the large extent of surface on which it was applied. The patients were all relieved at once, and the repair of the tissues was rapid and almost entirely without suppuration. All the survivors had left the hospital by the twenty-second day, and two-thirds of those who had been received were dismissed cured without presenting the slightest retraction or vicious cicatrix, interfering with normal movements. The deaths at Carbet, between two and three miles from the scene of the explosion in Saint-Pierre, were evidently due to suffocation from inhalation of gases emitted by the volcano under great pressure, and so hot that they caused the instantaneous coagulation of the blood, such as was observed at the burning of the Opéra-Comique at Paris. It is equally possible that death was due to electric phenomena.

19. **Hermophenyl in Treatment of Syphilis.**—Hermophenyl is the name given to the mercury phenol disulphonate of sodium by Lumière, who produced it by the same technic as is used in the production of the cacodylates. Contrary to the ordinary products of mercury, it does not precipitate the albuminoids, is not precipitated itself by hydrochloric acid, hydrosulphate of ammonia nor sodium, and is not altered by a temperature of 120 C. (249 F.) A sheet of gold leaf left in a 5 per cent. solution of hermophenyl for forty-eight hours was not affected. It forms a white very soluble powder, containing 40 per cent. mercury. It is very slightly toxic, the fatal dose for a guinea-pig by the mouth is 20 cg. per kilogram and by subcutaneous injection, 125 mg. A 1 to 5 per 1000 solution arrests all vegetation and kills the principal micro-organisms, and even a 1 to 2 per cent. solution does not induce local irritation nor pain. Hallopeau reports that he has used the hermophenyl in 20 cases of secondary syphilis and found that its action was fully equal to that of the ordinary mercurial preparations, while it has the advantage that it can be administered in large doses by the mouth without causing digestive disturbances. At first he tried it on 30 patients in intramuscular injections but found the buccal administration preferable. His experience superposed on that of others, indicates that the new preparation will find a useful field in therapeutics to alternate with other methods of mercurial treatment or substitute them under certain conditions.

20. **The Calorisateur.**—Glover's instrument is for the application of medicinal substances to the upper air and digestive passages. A current of superheated air is driven into a non-volatile medicinal fluid, heating it, sterilizing it and expelling it in the form of a medicated spray at body temperature.

32. **Bovine and Human Tuberculosis.**—Wolff had occasion to observe a case of fatal primary tuberculosis of the intestines in a man of 63, a master cabinet maker. It fulfilled in every particular the conditions declared necessary by Koch for the assumption of a primary tuberculous affection of the intestines. Two guinea-pigs were inoculated with matter from the spleen and both developed tuberculosis. A calf was then inoculated with the tuberculous organs of one of the guinea-pigs, after negative reaction to the tuberculin test. The calf was killed eighty-three days after the inoculation, and the internal organs were found the seat of the typical lesions of a severe case of bovine tuberculosis, that is, Perlsucht. Wolff's experiences further confirmed the fact, as he describes in detail, that animals and persons infected with tuberculosis by way of the alimentary canal may develop typical tuberculosis without exhibiting the slightest macroscopic lesion in the intestines. This explains the rarity of primary intestinal tuberculosis. He is also convinced that the infection from substances ingested occurs by way of the mouth in the majority of cases, principally through the tonsils.

33. **Paraffin Prothesis.**—Eckstein extols the advantages of using "hard paraffin," not melting below 57 to 60 C. He slips a piece of rubber tubing over the syringe to keep in the heat.

37. **"Antimorphin."**—Analysis of this medicine advertised as a cure for morphin addiction, shows that it contains a considerable proportion of morphin.

38. **Peroral Intubation.**—The laryngeal tube extends beyond the teeth in Kuhn's peroral intubation. It serves not only as a laryngeal tube but also as a speculum for the upper-air passages, a gag and a dilator. He advises it for use in anesthesias, etc.

60. **Gelatin Injections and Their Dangers.**—Hirsch relates two cases in which subcutaneous injection of gelatin proved fatal, and has collected five others. This raises to seven the total of deaths from this source in Germany, all succumbing with symptoms of tetanus. He also reports nine cases in which the gelatin injections proved a life-saving measure, mostly in cases of protracted hemoptysis.

66. **Anesthesia with "Anesthesin."**—Kassel is enthusiastic in his commendation of anesthesin for various purposes. It has proved especially useful in his experience for persons with dysphagia from ulcerations in the larynx. The anesthesia induced lasts two to twelve hours. The patients can inhale the anesthesin through an ordinary small inhaler. It thus advantageously substitutes orthoform for the purpose.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MASSAGE AND THE ORIGINAL SWEDISH MOVEMENTS. Their Application to Various Diseases of the Body. Lectures Before the Training Schools for Nurses Connected with the Hospital of the University of Pennsylvania, German Hospital, Woman's Hospital, Philadelphia Lying-in Charity Hospital, the Philadelphia Polyclinic and College for Graduates in Medicine, and the Kensington Hospital for Women, of Philadelphia. By Kurre W. Ostrom, from the Royal University of Upsala, Sweden. Fifth Edition, Revised and Enlarged, with 115 Illustrations. Cloth. Pp. 181. Price, $1.00. Philadelphia: P. Blakiston's Son & Co. 1902.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume VIII. Pediatrics and Orthopedic Surgery. Edited by W. S. Christopher, M.D., John Ridlon, A.M., M.D., and Samuel J. Walker, A.B., M.D. July, 1902. Cloth. Pp. 231. Price, $1.50. Chicago: The Year Book Publishers. 1902.

BIOLOGIC SCIENCE. Vital Force the Only Power and Active Principle That Can Operate the Living Human Organism. Thought Exercise for the Nineteenth Century. A Criticism on the Teachings of Prof. Rudolph Virchow of the University of Berlin, and Prof. Jacques Loeb of the University of Chicago. By W. R. Dunham, M.D. Paper. Pp. 50. Keene, N. H.: Published by the Author. 1902.

PHOTOGRAPHIC ATLAS OF THE DISEASES OF THE SKIN. A Series of Eighty Plates, Comprising More Than One Hundred Illustrations, with Descriptive Text and a Treatise on Cutaneous Therapeutics. By George Henry Fox, A.M., M.D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, N. Y. Part XIV. Price, $1.50. Philadelphia and London: J. B. Lippincott Co. 1901.

APPLIED SURGICAL ANATOMY Regionally Presented for the Use of Students and Practitioners of Medicine. By George Woolsey, A. B., M.D., Professor of Anatomy and Clinical Surgery in the Cornell University Medical College. With 125 Illustrations, Mostly Colored. Cloth. Pp. 521. Price, $5.00. New York and Philadelphia: Lea Brothers & Co. 1902.

REPORT ON OBSERVATIONS MADE ON THE CATTLE AT THE EXPERIMENTAL STATION AT OUTREMONT, P. Q. Recognized to Be Tuberculosis by the Tuberculin Test. By Prof. J. Georg Adami, M.A., M.D., and C. F. Martin, M.D. Paper. Pp. 32. Ottawa: Government Printing Bureau. 1899.

THE THEORY AND PRACTICE OF INFANT FEEDING, with Notes on [illegible] nry Dwight Chapin, A.M., M.D., Professor of [illegible] it the New York Post-Graduate Medical School [illegible] Numerous Illustrations. Cloth. Pp. 325. Price, $2.25. New York: Wm. Wood & Co. 1902.

REPORT OF THE MINISTER OF AGRICULTURE FOR THE DOMINION OF CANADA, for the Year Ended Oct. 31, 1901. Printed by Order of Parliament. Paper. Pp. 173. Ottawa: S. E. Dawson, Printer. 1902.

ANNUAL REPORT OF THE DEPARTMENT OF PUBLIC HEALTH OF SAN FRANCISCO for the Fiscal Year ending June 30, 1901. Paper. Pp. 271. San Francisco: The Hinton Printing Co. 1901.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. Vol. XIV. For the Year 1901. Cloth. Pp. 369. Philadelphia: Wm. J. Dornan. 1902.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 14 to 20, 1902, inclusive:

John D. Brooks, contract surgeon, member of a board at Fort

Yellowstone, Wyo., to examine officers of the Army for promotion.

George L. Cable, contract surgeon, former orders directing him to proceed from Fort Sam Houston to Eagle Pass, Tex., revoked.

Christopher C. Collins, lieutenant and asst.-surgeon, U. S. A., leave of absence extended seven days.

William H. Corbusier, major and surgeon, U. S. A., member of a board at Governor's Island, N. Y., to examine officers of the Army for promotion.

Elmer A. Dean, lieutenant and asst.-surgeon, U. S. A., from Columbus Arsenal, Tenn., on the expiration of his present leave of absence, to duty at Fort Strong, Mass.

James J. Edmonstone, captain and asst.-surgeon, U. S. Vols., having tendered his resignation, is honorably discharged from the service of the United States, to take effect Sept. 18, 1902; leave of absence granted to include Sept. 18, 1902.

Rudolph G. Ebert, major and surgeon, U. S. A., member of a board at Vancouver Barracks, Wash., to examine officers of the Army for promotion.

Harry L. Gilchrist, lieutenant and asst.-surgeon, U. S. A., member of a board at Vancouver Barracks, Wash., to examine officers of the Army for promotion.

Alfred C. Girard, colonel and assistant surgeon-general, in addition to his present duties, is detailed a member of the board appointed to meet at the Army Medical Museum, Washington, D. C., for the examination of candidates for admission into the Medical Corps of the Army.

J. W. Holland, contract surgeon, leave of absence for one month granted, to take effect Aug. 20, 1902.

Park Howell, lieutenant and asst.-surgeon, U. S. A., when relieved from duty at Fort Clark, Tex., by the arrival of Contract Surgeon C. S. Snyder, to report for duty at Camp Eagle Pass, Tex.

Harry M. James, contract surgeon, relieved from duty at Camp Thomas, Ga., to proceed to his home at New York City, N. Y., for annulment of contract.

Edgar A. Mearns, major and surgeon, U. S. A., member of a board at Fort Yellowstone, Wyo., to examine officers of the Army for promotion.

Robert H. Pierson, contract surgeon, former orders appointing him a member of a board at Governor's Island, N. Y., to examine officers of the Army for promotion are amended to read: Robert H. Pierson, lieutenant and asst.-surgeon, U. S. A.

Thomas L. Rhoads, lieutenant and asst.-surgeon, U. S. A., having arrived at San Francisco, Cal., will report for assignment in the Department of California.

Edmund D. Shortlidge, lieutenant and asst.-surgeon, U. S. A., is relieved from further duty in the Division of the Philippines and will proceed to San Francisco, Cal. On arrival he will report to the Adjutant-General of the Army for further orders.

George A. Skinner, captain and asst.-surgeon, U. S. A., now at Fort Harrison, Mont., will proceed to Fort Snelling, Minn., for duty at that post.

C. D. Snyder, contract surgeon now at Fort Niobrara, Neb., will proceed to Fort Clark, Tex., for duty at that post.

Henry D. Snyder, captain and asst.-surgeon, U. S. A., is relieved from duty as attending surgeon and examiner of recruits at New York City, N. Y., to take effect on the expiration of his present leave of absence; he will then report for duty at Plattsburg Barracks, N. Y.

William E. Vose, lieutenant and asst.-surgeon, U. S. A., having reported his arrival at San Francisco, will proceed to Columbia, Tenn., for duty at the Columbia Arsenal.

William J. Wakeman, major and surgeon, U. S. A., on being relieved from duty in New York City, will proceed to Fort McPherson, Ga., for duty at that post.

William L. Whittington, major and surgeon, U. S. Vols., leave of absence from the Division of the Philippines extended one month.

James S. Wilson, captain and asst.-surgeon, U. S. A., is honorably discharged by the Assistant Secretary of War, as major and surgeon, U. S. Vols., only to take effect Aug. 15, 1902; having reported his arrival at San Francisco, he will proceed to New York City, and relieve Major William J. Wakeman from temporary duty as attending surgeon and examiner of recruits in that city.

APPOINTMENTS, PROMOTIONS, CASUALTIES, ETC.,

in the Medical Department, recorded in the Adjutant-General's office between July 15 and Aug. 15, 1902:

Regular Army, Appointments.—To be assistant-surgeons with the rank of first lieutenant, to date from June 24, [illegible] Kirby-Smith of Tennessee, William H. Moncrief [illegible] L. Collins of Massachusetts, Charles F. Morse of [illegible] E. Lambert of Alabama, Haywood S. Hansell of [illegible] Gregory of Virginia, Clarence H. Connor of Iowa, Jay W. Grissinger of Pennsylvania, Will L. Pyles of the District of Columbia, Thomas Devereux of Minnesota, Robert H. Pierson of New York, Cary A. Snoddy of Tennessee, and Harry S. Purnell of Maryland.

Retirement.—Marshall W. Wood, major and surgeon, Aug. 12, 1902, for disability incident to the service.

Resignation.—Lieutenant William J. Calvert, asst.-surgeon, Aug. 9, 1902.

Volunteers, Appointments.—Captain Joseph C. Reifsnyder, asst.-surgeon, U. S. Vols., to be surgeon, with the rank of major, April 15, 1902; John P. Kelly of Florida, contract surgeon, to be asst.-surgeon, U. S. Vols., with the rank of captain, June 20, 1902.

Honorably Discharged.—Captain W. Hoepfner Winterberg, asst.-surgeon, July 31, 1902.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending August 23:

P. A. Surgeon E. O. Huntington, granted sick leave for three months.

Surgeon George A. Lung, ordered to the Bureau of Medicine and Surgery, Navy Department.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 21, 1902:

Surgeon Fairfax Irwin, granted leave of absence for one month from September 1.

Surgeon P. C. Kalloch, granted leave of absence for 3 days from August 27.

Surgeon A. H. Glennan, to report at Washington, D. C., for special temporary duty.

Surgeon S. D. Brooks, to assume temporary command of the Portland, Me., quarantine, during absence, on leave, of Surgeon P. C. Kalloch.

P. A. Surgeon S. B. Grubbs, granted leave of absence for fourteen days from August 19.

Asst.-Surgeon L. D. Fricks, relieved from duty at Boston, Mass., and directed to proceed to Savannah, Ga., quarantine, and assume temporary command during absence, on sick leave, of A. A. Surgeon W. J. Linley.

Asst.-Surgeon V. G. Heiser, to proceed to Immigration Depot, New York City, for special temporary duty.

Asst.-Surgeon T. D. Berry, granted fifteen days' extension of leave of absence, on account of sickness, from August 17.

Asst.-Surgeon J. W. Trask, relieved from duty at Detroit, Mich., and directed to proceed to Fort Stanton, N. M., and report to medical officer in command for duty and assignment to quarters.

A. A. Surgeon W. A. Kimmet, granted leave of absence for thirty days from August 10.

A. A. Surgeon W. J. O'Reilly, granted leave of absence for eight days from August 18.

Pharmacist and Chemist Henry Hahn, granted leave of absence for twelve days from August 18.

Senior Pharmacist Charles Miller, granted leave of absence for thirty days from September 9.

Senior Pharmacist J. V. LaGrange, granted leave of absence for thirty days from September 2.

Junior Pharmacist M. H. Watters, granted leave of absence for thirty days from August 18.

APPOINTMENT.

John William Trask of Michigan, commissioned (recess) as asst.-surgeon.

BOARDS CONVENED.

Board convened to meet at Southport, N. C., Aug. 21, 1902, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon John Godfrey, chairman; Asst.-Surgeon T. B. McClintic, recorder.

Board convened to meet at the U. S. Marine-Hospital, Stapleton, N. Y., Aug. 25, 1902, for the physical examination of officers of the Revenue Cutter Service. Detail for the Board: Surgeon Preston H. Bailhache, chairman; P. A. Surgeon A. C. Smith, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 23, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 3-10, 2 cases.

Florida: Pensacola, Aug. 8-16, 4 cases.

Massachusetts: Boston, Aug. 8-16, 8 cases, 3 deaths; Brockton, Aug. 8-16, 1 case; Cambridge, Aug. 2-16, 5 cases, 3 deaths; Everett, Aug. 8-16, 1 case; Fitchburg, Aug. 8-16, 1 case; Somerville, Aug. 8-16, 1 case.

Michigan: Detroit, Aug. 8-16, 2 cases.

Missouri: St. Joseph, Aug. 2-16, 36 cases; St. Louis, Aug. 10-17, 2 cases

Montana: Butte, Aug. 10-17, 1 case.

Nebraska: Omaha, Aug. 8-16, 4 cases.

New Jersey: Aug. 8-16, Camden, 1 case; Newark, 3 cases, 3 deaths.

New York: New York, Aug. 8-16, 2 cases, 1 death.

Ohio: Cincinnati, Aug. 8-15, 1 case; Cleveland, Aug. 8-16, 58 cases, 8 deaths; Hamilton, Aug. 2-9, 1 case.

Pennsylvania: Aug. 8-16, Altoona, 1 death; Johnstown, 3 cases, 2 deaths; McKeesport, 1 death; Philadelphia, 1 case, 1 death.

Rhode Island: Providence, Aug. 8-16, 1 death.

South Carolina: Charleston, Aug. 8-16, 2 cases.

Utah: Salt Lake City, Aug. 8-16, 2 cases.

Wisconsin: Milwaukee, Aug. 8-16, 3 cases.

SMALLPOX—FOREIGN.

Austria: Prague, July 26-Aug. 2, 2 cases.

Barbadoes: July 29, 15 cases.

Belgium: Antwerp, July 18-25, 4 cases.

Great Britain: Liverpool, Aug. 2-9, 11 cases, 1 death; London, July 26-Aug. 2, 44 cases, 7 deaths.

India: Bombay, July 15-22, 3 deaths; Karachi, July 6-20, 1 case; Madras, July 12-18, 2 deaths.

Italy: Palermo, July 26-Aug. 2, 8 cases.

Japan: Formosa, May 1-31, 22 cases, 4 deaths.

Russia: Moscow, July 17-26, 5 cases, 3 deaths; Odessa, July 26-Aug. 2, 3 cases; St. Petersburg, July 17-26, 1 case.

Straits Settlements: Singapore, June 14-July 12, 2 deaths.

YELLOW FEVER.

Colombia: Panama, Aug. 4-11, 1 case, 1 death.

Mexico: Coatzacoalcos, Aug. 2-9, 9 cases, 1 death; Progreso, July 15-Aug. 9, 4 cases, 3 deaths.

CHOLERA.

China: Niuschwang, July 12-19, 66 deaths.

Egypt: Aboukoukas, Aug. 19, 78 cases, 38 deaths; Assiout Province, Aug. 19, serious; Cairo, Aug. 19, 3 cases; Charkieh, Aug. 19, 19 cases; Minieh, Aug. 19, 43 cases; Alexandria, Aug. 19, 2 cases.

India: Calcutta, July 12-19, 73 deaths; Karachi, July 6-20, 191 cases, 130 deaths.

Japan: Formosa, May 1-31, 7 cases, 4 deaths; Fukuoka Ken, to July 10, 101 cases, 56 deaths; Kobe, July 15, present; Nagasaki, July 1-19, 5 cases, 2 deaths; Mogi, to July 20, 23 cases, 16 deaths; Okayama, Aug. 9, present; Tokyo, July 9, 1 death.

Straits Settlements: Singapore, June 14-July 12, 170 deaths.

PLAGUE.

Australia: Brisbane, April 1-May 31, 45 cases, 17 deaths.

India: Bombay, July 15-22, 37 deaths; Calcutta, July 12-19, 19 deaths; Karachi, July 6-20, 74 cases, 60 deaths.

Japan: Formosa, May 1-31, 700 cases, 555 deaths.

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Original Articles.

LINNÆUS AS A PHYSICIAN.[*]

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CHICAGO.

INTRODUCTION.

Among physician-scientists who achieved their greatest renown in some department of learning other than medicine Carl von Linné, better known as Carolus Linnæus, must be placed in the front rank. This great naturalist made for himself a permanent name in medicine also, but the extent and significance of his work and interest in medicine seem to have been more or less overshadowed by the fundamental importance of his work in natural science, especially botany.

The principal sources of the information in this article have been Richard Pulteney's excellent work on the writings of Linnæus,[†] in which the medical writings also are fully considered, and Hjelt's special work concerning Linnæus as a physician,[‡] based upon personal study of the writings and correspondence of Linnæus and of the records in the archives of the University of Upsala. Both these books appear to give altogether thorough and sympathetic reviews of Linnæus' medical activity in its various aspects as teacher, investigator and writer.

OUTLINE OF THE CAREER OF LINNÆUS.

Born in 1707, Carl von Linné was destined by his father for holy orders, but showed such distaste for scholastic studies and such desires to ramble in search of plants and flowers that his father was urged to apprentice him to a tailor or shoemaker. Through the kind efforts of a physician Linnæus was encouraged in his study of plants and of physiology, and eventually admitted to the University of Lund with a testimonial of the following dubious import: "Youth at school might be compared to shrubs in a garden which may disappoint the gardener, but if transplanted into different soil they may prosper." It was hoped that in the university the conditions might be more propitious for his progress.

As a student Linnæus assisted in private practice. At that time there was no real clinical instruction in Sweden, and it was customary for the young men to work under preceptors ("freqventera sjukstugan och lära av den svidandes egna mun"). When Linnæus came to Upsala in 1729 the medical faculty consisted of two professors and one adjunct. One professor taught pathology, dietetics, surgery, pharmacy; the other physic, chemistry, anatomy, physiology and botany, each constituting by himself a whole faculty. Olaf Rudbeck, the older, celebrated for his discoveries in the lymphatic system, had founded a botanic garden, but his successor, his son (1660-1740), though a good botanist, neglected botany for comparative philology and antiquarianism. In 1730 Linnæus had advanced so far in the esteem of his teachers that he was given a stipend and began to lecture on botany, with such success that intrigues were started against him and his docentship taken away. Advised by friends, Linnæus went to Harderwick, in Holland, where he obtained his degree in 1735, the title of his dissertation being "Hypothesis nova de febrium intermittentium causa." This thesis was founded principally on observations made in Sweden, where it probably was written. He sought, and after waiting eight days, gained admission to the great Boerhaave, then near the end of his illustrious career, but who helped him much in his botanical studies. At that time botany flourished in Holland, Boerhaave himself being a botanist, and Linnæus' love for botany kept him away from home and his future wife for three years longer. The work he did during this time exercised vast influence on the development of botany, being in reality the starting point of systematic botanical science.

He early became conspicuous in Holland and secured the regard of all that cultivated any branch of medical science, among them being Van Swieten and Lieberkühn. Linnæus reaped the greatest benefit from his close relationship with the illustrious Boerhaave, who showed the young Swedish scientist marked friendship and confidence. The following extract from Linnæus' diary—a curious and interesting document—describes their last meeting: "Before the time of Linnæus intending to leave Leyden, Boerhaave had been attacked with hydrops thoracis, and consequently with great difficulty of respiration; he had, therefore, given orders that no person should be admitted to see or speak to him, for he could not lie down in his bed, but was obliged constantly to sit up. Linnæus was the only person in whose favor exception was made, that he might see him and kiss the hand of his great instructor, to bid him a sorrowful adieu. The venerable invalid had still strength enough left to stretch out his hand, and (putting it to his lips and kissing it in return) to say: 'I have lived my time out, and my days are at an end. I have done everything that was in my power. May God protect thee, with whom this duty remains. What the world required of me it has got, but from thee it expects much more. Farewell, my dear Linnæus!' Tears prevented him from saying more, and, on Linnæus' return to his lodgings, he sent him an elegant copy of his Chemistry." And surely Linnæus may be placed by the side of Haller, Van Swieten, De Haen and others as a worthy pupil of a great master.

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[*] Read before the Scandinavian Medical Society of Chicago, May 29, 1902.

[†] Richard Pultney, M.D., F.R.S., "A General View of the Writings of Linnæus." Second edition, with corrections, considerable additions, and memoir of the author by William George Maton, M.D., etc. London, 1805. With translation of Linnæus' diary.

[‡] Otto E. A. Hjelt, Carl von Linné som Läkare och hans Betydelse för den medicinska Vetenskapen i Sverige. Helsingfors, 1877.

Greatly honored throughout Europe for his work in botany, so that Sauvages wrote, "the whole botanical world obeys you forever," and having received flattering offers to remain in Holland, and also from Oxford and Paris, Linnæus, in 1738, returned to Sweden and settled in Stockholm, where, after a desolate period of waiting for patients, he achieved his first success through treatment of gonorrhea. Always afterward he showed much interest in the treatment of gonorrhea and syphilis. He became naval physician and utilized his opportunities to study diseases and the actions of drugs. He also secured permission to make postmortems, heretofore but rarely granted, and Hjelt states that from this time the interest in pathologic anatomy increased in Sweden. In 1739 he married the choice of his heart after an engagement of several years; his practice increased rapidly, but he felt himself irresistibly drawn toward botany and natural science. He was offered a professorship in Göttingen, but in May, 1741, he received appointment as professor in Upsala in spite of a hot fight against him; the following year an adjustment with his colleague, Rosén, gave Linnæus botany and the botanical gardens, and for the succeeding thirty-six years the great botanist was continuously interested more or less in medical problems.

Thenceforward his life was a continuous course of prosperity. He was greatly honored. Botany occupied his special attention in spring and summer; in the autumn and winter months he gave the more purely medical lectures. He gathered about him a larger circle of students and listeners than any one either before or after him has done; the number of students in the university rose from five hundred to fifteen hundred, and he "shifted the scientific center of gravity to a small town in Sweden." Students flocked to hear him from Finland, Norway, Denmark, Germany, Russia, England, and even from America. Adam Kuhn of Philadelphia spent the years 1763-1765 in Upsala as student under Linnæus, who regarded him with special favor. Kuhn, in 1768, became the professor of materia medica and botany in the College of Philadelphia, where he gave lectures on materia medica for twenty-one years. When the College of Philadelphia, in 1791, united with the University of the State of Pennsylvania to form the University of Pennsylvania, Dr. Kuhn became professor of theory and practice of medicine, continuing as such for six years.

As a general result of Linnæus' influence, the study of the natural sciences received a mighty stimulus in the universities where logical disputations and metaphysical speculations too long had prevailed to the exclusion of science. The culture of natural science in Sweden was carried to a higher standard than elsewhere in Europe, but his pupils rapidly extended the doctrines and celebrity of their master, and before long numerous public institutions were established elsewhere also for the express cultivation of natural sciences. Linnæus emphasized eloquently the relations and importance of the study of natural history to the welfare of the people, and was ever striving to enlist the interests of the great in behalf of this study and to draw the youth of the land into its paths. In this respect there is great similarity between Linnæus and Pasteur; for Pasteur was irresistibly drawn toward scientific problems connected with industries of large economic importance. Linnæus found special delight in the study of natural science, which he regarded as "one of the richest and most permanent sources of pleasure which the kindness of providence has opened to the human mind." In his labor to arrange anew the history of the productions of nature "he found biology a chaos and left it a cosmos."

LINNÆUS' RELATIONS TO MEDICINE IN GENERAL.

Linnæus was deeply interested in the development of medicine in all its phases. He urged its establishment upon a rational basis of theory and observation. Exact observations of nature and logical grouping of the results are essential for progress, philosophical theory being the key to the explanation of practical observations, which in turn test the theory. While empirical medicine employs curative methods, the mode of action of which it can not explain, rational medicine endeavors to discover the laws, mechanical and otherwise, that govern structure and function, and to re-establish the conditions that are disturbed by disease. Weak hypotheses and prejudiced notions retard medicine as well as other sciences; if medicine is to develop, it, like other sciences, must employ experimental methods. He recognized and expressed clearly that rational medicine to a large extent is the result of co-ordination of anatomic, physiologic, botanic, chemical and mechanical truths. Hospitals and botanic gardens are necessary for the study of the nature and treatment of diseases. In fatal cases the internal organs should be examined in the end that the causes of disease may be understood and perhaps prevented or modified. He suggests that in many diseases the arrest of increased activity of the morbific cause may be all that can be attained.

Linnæus' interest in the methods of medical education proved of great importance to the study of medicine in Sweden. The course of instruction in the University of Upsala was modified and improved; the requirements for final examinations were raised and their character materially improved. Practical and public examinations in the hospital were introduced. Linnæus' lectures were characterized by clearness, conciseness, ingenuity of classification and direct bearing on practice, and the attendance became very large. Botany was not permitted to crowd out his interest in practical medicine in the widest sense. He wrote popular articles of medical nature, furnished material for almanacs and did much to disseminate useful advice and information. He aided veterinary medicine and helped it to secure recognition in his country. His writings in regard to alcohol unquestionably had some influence in checking the abuse of this substance. It was Linnæus' greatest pleasure to teach the results of his observations and to spread knowledge broadcast. Instruction was his most enjoyable occupation, and he regarded the creation of desire for and pleasure in study as the most important duty of university teachers. He did not hesitate to become the popular exponent of scientific observations, and as such we know he was instructive and inspiring.

THE MEDICAL PHILOSOPHY OF LINNÆUS AND HIS PRINCIPAL MEDICAL WRITINGS.

An interesting phase of Linnæus' work is the extensive correspondence he carried on with learned men and other persons all over the world. Perhaps the most noteworthy correspondence is that with François Boissier de la Croix Sauvages (1706-1767), professor in the medical school of Montpellier; between these two there was carried on a constant and frequent epistolatory exchange of ideas and observations without personal acquaintance. After Boerhaave, Sauvages undoubtedly exercised the greatest influence upon Linnæus' relation to and interest in medicine. Sauvages in 1731 published a work entitled "Nouvelles Classes des Maladies," which became Linnæus' guide in his lectures on nosology. In this work Sauvages, who also had a first love for botany, made the first attempt to arrange diseases into classes and species as recommended by Sydenham and Baglivi for medicine. The system and order in Sauvages' work at once appealed to Linnæus, in whom arrangement was a passion and classification a delight. Later, when Sauvages in 1760 published his great work entitled "Nosologia methodica sistens morborum classes juxta Sydenhami mentem et botanicorum ordinem," Linnæus at once introduced it as a text-book for his students. And Linnæus follows Sauvages closely[*] in his own work on "Genera Morborum" (1763), in which the diseases are classified into orders, classes and species. The system is largely symptomatologic. Acute inflammations are referred to fevers and divided into membranous and parenchymatous. Especially the group of Morbi dolorosi contains many single symptoms listed as distinct diseases. The group of Deformes and Vitia which comprise cutaneous affections and tumors, etc., represent definite anatomic forms. Naturally the system corresponds closely with the views prevalent among medical men at that time. There was then no real knowledge of the finer structure of the human body, the relation of diseases to anatomic changes were not understood thoroughly, symptomatology was the phase most actively investigated, and a large fund of therapeutic experience had been gathered. Morgagni's fundamental work in special pathologic anatomy, "De sedibus et causis morborum," did not appear until 1762. While Linnæus clearly recognized the importance of pathologic anatomy—he himself made postmortems while in Stockholm, and he subsequently urged their importance—yet his notions of general pathology were governed largely by his views concerning the action and nature of drugs.

MORBI.

Febriles (e sanguine in medullam)			Exantematici. Critici. Phlogistici.
Temperati	Nervini	Sensationis	Dolorosi.
		Judicii	Mentales.
		Motus	Quietales. Motorii.
	Fluidi	Secretionis	Suppressorii. Evacuatorii.
	Solidi	Interni	Deformes.
		Externi	Vitia.

Exanthematici	Febris cum efforescentia cutis maculata.
Critici	Febris cum urinae hypostasi lateritia.
Phlogistici	Febris cum pulso duro, dolore topico.
Dolorosi	Doloris sensatio.
Mentales	Judicii aberratio.
Quietales	Motus involuntarius.
Motorii	Motos abolitio.
Suppressorii	Meatum impeditio.
Evacuatorii	Fluidorum evacuatio.
Deformes	Solidorum facies mutata.
Vitia	Externa palpabilia.

Linnæus' philosophy of disease is based on the fundamental conception that the human body consists of cortical and medullary (nervous) substances; it is like a woven cloth of double threads, the nerves constituting the warp and enclosing various fibers and fluids, the weft. The medullary substance is of maternal origin and it is the first formed. Further, it is the seat of feeling and motion and the fluid and solid parts arise under its influence. The medullary part in turn is nourished by the finest materials in the cortical parts and by electricity taken in through the lungs from the air. Now, it is disturbance in the normal relations of these parts that cause disease. In fevers, for instance, the fluid cortical part is profoundly altered by acidifying (ab acido seri sanguinis) or decomposing substances that enter the body (a putrido cruoris sanguinis), the fever being critical in the first place and phlogistic in the second. Exanthematous fevers, on the other hand, perhaps depend on living contagium (ab exanthematibus vivis contagiosis). Every inflammation is accompanied by pain because the fibers are stretched to the point of breaking. In order to cure disease the condition of the fluid or solid parts must be changed to the opposite of that under which disease developed. Now, the power of medicines to produce such alterations may be recognized by their taste and smell, and the most important are obtained from plants of opposite smell and taste (sapida and olida). This theory of contraries is the leading thought of all of Linnæus' medical writings, and it constitutes the basis for his classification of materia medica. As seen from the subjacent table, he conceived that there were five kinds of taste and smell, each with its contrary, corresponding to five different pathologic conditions in the two constituent parts of the body. "Linné was the first who saw that nature is balanced by contraries, and acted upon numero quinario." He held smell to be due to motion in the nerves. The idea that the nervous system is distinct and separate from the rest of the body seems to have become necessary in order to arrange medicines in certain large groups because the odoriferous and volatile substances appeared to act directly upon the brain and nerves.

I. SAPIDA.

Agunt in corticale vitale:

	In Fluida.	In Solida.	
1. Aquosa	Mundificantia, Absorbentia.	Humectantia, Exsicantia,	Sicca.
2. Acida	Rifrigerantia. Balsamica.	Attenuantia. Tonica,	Amara.
3. Dulcia	Edulcorantia, Incidentia,	Impinguntia, Corrodentia.	Acria.
4. Viscosa	Inviscantia, Penetrantia,	Lubricantia, Abstergentia,	Salsa.
5. Pinguia	Obtundentia. Inspissantia.	Emollientia, Adstringentia.	Stiptica.

II. OLIDA.

Agunt in medullare animatum:

Sensum	Excitant	Aromatica	Sopiunt	Virosa
Motum	Spasticant	Argastica	Evacuant	Nauseosa
Judicium	Acuunt	Sprirituosa	Confundunt	Tetra
Libidinem	Provocant	Ambrosiaca	Suffocant	Airsina

Linnæus' pathology appears to be a compromise between the iatrochemic school—which taught that health depended upon the proper chemical relations of the fluids of the body—and iatromechanic or iatromathematic school—which explained disease according to the laws of mechanics and mathematics applied to the human body. While distinctly influenced by Boerhaave's fibrillar pathology, which sought explanations for disease in the tension and relaxation of fibers (fibrum strictum et laxum), which are constituent parts of the body, Linnæus carried this idea much further into details and sought also for corresponding conditions in the fluids. Accordingly, the fibers may be not merely tense or lax, but (a) moist, dry; (b) friable, tough; (c) fat, slender; (d) thick, thin; (e) flexible, stiff. As more or less corresponding conditions in the humors, including the blood, which are the real sources of solid fibers, he enumerates: (a) thin, thick; (b) acid, phlogistic; (c) oily, acrid; (d) plethoric, deficient; (e) glutinous, muriatic. The inter-relations between the fibers and the fluids are well expressed in the following sentence: "Qualis chylus, talis sanguis, qualis sanguis, tales fibræ, quales fibræ, tales oriuntur morbi." A fundamental idea seems to have been that equilibrium in nature depends on a constant struggle between opposites. "The human body may be considered as a balance, and when it equilibrates we feel well, but so soon as any overweight appears on either side, then we are sick." His principle of "contrariorum e contrarius curatio" is a further therapeutic application of this theory.

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[*] Linnæus has 11 classes, 37 orders, 325 species. Sauvages, 10 classes, 44 orders, 314 species.

Materia medica was Linnæus' favorite branch in medicine. This naturally was due to the close relationship between pharmacology and botany. In those days botanists generally made incursions into medicine, and it undoubtedly was a source of much satisfaction to Linnæus that he could blend with his teaching of botany the practical part arising out of it, namely, materia medica. We know that he strove hard to introduce indigenous drugs into materia medica and to establish the cultivation of medicinal and other useful plants. He published a highly estimated Materia Medica (1749), which appeared in several editions in Germany. This work is regarded as his most important. The great A. von Haller calls it "commodissimum praelectionibus compendium, inter optima auctoris," and Gronovius and Royen added their compliments. For a long time it remained as a model for other authors. The pharmaceutical plants were arranged according to his botanical system and a careful description given of those drugs used in medicine with a brief statement of their therapeutic value. He endeavored to include only useful drugs and warned strongly against complex formulæ. The empirical classification was abandoned in favor of one based on the general theory that "sapida in fibras, olida in nervos agunt." The chief merit of the work is that by bringing some degree of order and system into this branch he laid the foundation for the scientific study and development of materia medica. He was instrumental in introducing into medicine quassia, solanum, dulcamara. and many other substances. Hjelt lays much stress upon Linnæus' effort to establish the nature of poisons which, he urged, give us the best medicines if rightly used.

Another noteworthy book is his "Clavis Medicinæ," which contains his fundamental pathologico-therapeutic theories in the most concentrated form. Perhaps this is the most remarkable of all his works because it is a definite attempt to construct a comprehensive medical doctrine upon the basis of certain theoretical conceptions. It certainly is a striking example of Linnæus' ability to co-ordinate and arrange scientific facts of various kinds under one leading idea. Couched in a more or less aphoristic language, it makes rather difficult reading. It is dedicated to Sigfr. Albinus, Anatomico summo, Alb. von Haller, Physiologico summo, Gerardo Van Swieten, Observatori summo, Franc. de Sauvages, Pathologo summo, Nicol v. Rosenstein, Therapeutico summo.

LINNÆUS' DIETETICS AND HYGIENE.

Linnæus was interested especially in dietetics and hygiene, and his lectures upon this topic were largely attended, and served to create marked professional and popular interest in hygiene, which thus got an early start in Sweden. He mentions six principal requisites for natural life, namely, fresh air, bodily movement, sleep, food, excretions and affections. He attributes hysteria and other morbid conditions among the rich to sedentary life. He explains the effects of air, exercise, etc., according to his general pathologic principles, as is further shown in this table from his "Clavis Medicinæ."

	FLUIDA.	SOLIDA.		
1. Excreta	Densa,	Torrida.		
	Tenuia,	Humida,	Retenta	2.
3. Motio	Phlogistica,	Tenacia,		
	Acidula,	Tenera,	Qvis	4.
5. Vigiliæ	Acria,	Macra,		
	Oleosa,	Pinguia,	Somnus	6.
7. Fames	Pauperata,	Gracilia,		
	Plethorica,	Turgida,	Cibus	8.
9. Frigus	Muriatica,	Rigidia.		
	Glutinosa.	Fluxa,	Calor	10.

The application of his general pathologic and therapeutic theories to hygiene is illustrated further by the following statements: Atmosphere influences the body through heat and cold. Cold renders the fibers stiff and the fluids more salty, leading to crystallization and stone formation, while warmth relaxes the fibers and promotes the formation of glutinous material. The softer the fibers the greater the viscidity, the opposite of salty. Motion makes the fluids active, the fibers tenacious, and as the fluids are distributed the parts come closely together. Rest leads to the production of acid and renders the fibers brittle. Sleep leads to fat in the solid parts and makes the fluids oily; hunger and waking makes the fibers thin and the fluids sharp, hence the best remedy for fat is waking. Excessive evacuations render the fluids thicker and fibers dry, bodily enfeeblement and emaciation resulting, while retention renders the solid parts moist and the fluids thin.

LINNÆUS' ETIOLOGIC THEORIES.

Linnæus paid especial attention to the question of etiology of disease. He regarded the cause as of fundamental significance in determining the kind of disease in a given case. Like the old physicians, he divided causes into proximal and remote, and according to his theory the proximal cause lay in changed tension of the solid parts or in altered mixture of the fluids, while the remote causes might be found in diet, age, bodily constitution, or in contagion.

Perhaps the most remarkable of Linnæus' various medical theories is the one concerning "exanthemata viva," or that contagious diseases depend upon the entrance of small living animals into the body. This assumption he regards as fully warranted, both in analogy and experience. Of such diseases he mentions scabies, epidemic dysentery (scabies intestinorum interna), pertussis, smallpox, pest; later leprosy, phthisis pulmonum and the malarial fevers were added to this category. While the small animals Linnæus had in mind had not yet been seen or described, he saw in the manner of the spread of infectious diseases a remarkable similarity to the mode of reproduction and increase of many animals, especially insects. The smaller an animal the more numerous and rapid its progeny, hence it is not difficult to conceive that some of these minute organisms by their excessively rapid multiplication may in a short time totally fill, as it were, the whole human body. As an illustration of this fact he cites the inoculation of smallpox, in which the quantity of pus used is of no import in securing the development of good pustules. That the contagious element is destroyed by cold, but multiplies in warmth is cited as another evidence of the parasitic origin of contagious diseases. Ustilago is cited as analogous to the contagious element. The drugs that destroy insects of various kinds—musk, camphor, mercurials, sulphur, etc.—were useful also in contagious diseases.

Linnæus always felt much interest in intermittent fever, which was endemic about Upsala at the time of his first arrival, and which formed the subject of his inaugural dissertation in Holland in 1735. He himself became a sufferer from this disease at the end of his sojourn in Holland. In Sweden intermittent fever occurred in clayey districts, and Linnæus first advanced the notion that particles of clay dissolved in water entered the blood and by arrest in the finer vessels interfered with cutaneous transportation. Later this theory of waterborne malaria was modified very much, and the disease was attributed to absorption by the skin of foul particles in the air, namely, miasms from quiescent waters, closed cellars, graves, decomposing animal and vegetable materials. Air, he urged, must contain some form of acid because vegetable and animal tissues and fluids become sour under its influence. Now, is it not possible that intermittent fever is caused by a coagulation of the serous part of the blood under the influence of "animalcula infinite parva" in the atmosphere which carry this acidifying substance. In further support of this theory he mentions the endemic occurrence of the disease in moist places with clayey soil and foggy atmosphere; the frequency with which it affects persons living on the ground floor or in cold, foggy places; the sour sweats of malarial patients, and the fact that bitter drugs, such as cinchona, which generally diminish acidity in the body, are the most useful in malarial diseases. Consumption, he believed, was caused by the inhalation of fine particles in the air which is permeated by minute floating substances of diverse kinds; this he illustrated by referring to the frequency of "tussis calculosa" among the stone-cutters in Orsa, Dalarne. He frequently makes mention of the contagiousness of tuberculosis. As an especially efficient treatment of incipient tuberculosis horseback riding is urged.

MISCELLANEOUS INVESTIGATIONS AND OBSERVATIONS.

In 1746-47 and 1754-55 he was engaged especially in studying a peculiar disease then appearing in the southern parts of Sweden (dragsjukan). His observations were summarized as follows: The disease attacks only the lower classes, but children never; it occurs only in the autumn and may show itself in domestic animals also; it lasts for two or three months, generally attacking several persons in the same household, but nevertheless it is not contagious. He concluded that the disease, which we now know as ergotism, is due to the use of freshly gathered corn; and as it occurred mostly after wet summers, when weeds abounded, he assigned the real cause to the weed predominating in the fields, namely, *Raphanus raphanistum* (jointed charloch or black radish), and suggested the name raphania. The disease was known under this term until the correct name arose from a more exact knowledge of its etiology.

Much of Linnæus' work is contained in dissertations by his pupils and many of them were enlarged transcriptions of lectures. A collection was made in a series of ten volumes,* of which seven are by Linnæus and three by Schreber and Erlangen. Pulteney gives an abstract of those by Linnæus' students.

Linnæus emphasized much the diagnostic and prognostic importance of the pulse. Actual knowledge of circulatory diseases seems to have been well advanced at that time, because we find he attributes irregular pulse to any of the following conditions: inflammation of the heart; dilatation of its muscle; aneurisms; tumors, polypi and abscesses of the heart; inflammation of the valves; obliteration of the pericardial cavity and other lesions of the pericardium; irregular action of the cardiac nerves. Further, it may depend on paralysis or spasm of the vessels, inflammatory stasis, ossification of the arteries, aneurisms and polypoid concretions. Finally, the cause may be in the blood itself.

It is of much interest to note that Linnæus suggested that fibrinous polypi within the vessels may be loosened and cause death from sudden suffocation. In other words, he recognized fairly well the mechanism of pulmonary embolism.

Linnæus distinguished correctly between cerebral hemorrhage and congestion. His description of hemicrania is excellent, being himself a sufferer from this affection. In 1742 he described well a typical case of aphasia under the title of "Failure to remember substantives, especially names" (Glömska af alla substantiva och isynnerhet namn). Matthew Baillie described aphasia first in English, and that was in 1806.

His study of the gadfly of the reindeer—Œstrus tarandi—during a journey of scientific exploration into Lapland while still a youth, is an excellent example of power of observation and of accurate and decisive description. In the first place the fly is described accurately, as is the method of disposition of the eggs on the skin by means of the tail. Then he shows that the gnats penetrate the skin at a time when the horns are in the velvet and so soft that the pests can not be driven away, the entire series of events as well as the intricate mechanisms brought into play being ascribed to the ingenious arrangement of an all-wise Creator. Even then he studied carefully sickness among men and animals.

Rosén and Linnæus made many important observations concerning parasitic worms; among those described is Tenia solium (Linné, 1756). He taught that tenia had no head and that it might grow ad infinitum.

CONCLUSIONS.

In terminating this fragmentary sketch of a small part of the work of Linnæus it seems to me that he is fully entitled to a place among the founders of the scientific school of medicine whose object it is to understand the nature of disease and to find and remove the causes of disease. The underlying principles, the scope and the results of his teachings and his labors entitle him to this distinction. At the same time as his predominating influence on the study of natural science in general, both directly, especially in Sweden, and indirectly advanced the scientific study of medicine, he himself and his pupils made distinct and permanent additions to our knowledge of diseases. He fully recognized and urged the importance of theoretic investigation in medicine, unprejudiced observation at the bedside, anatomical inquiry and rational therapy. Finally, he saw glimpses of great etiologic truths in regard to infectious diseases at a time when the great and populous microscopic world was indeed a "mundus invisibilis."

APPENDIX.

Linnæus' one foible according to the standards of today was love of fame and this frailty is freely exposed in his diary, the part of which concerning medicine is transcribed as translated from the Swedish manuscript in Pulteney's work, second edition, edited by Maton:

> Linnæus practiced physic at Stockholm from 1739 to 1741; he was physician to the great naval hospital there, and had, besides, as much practice as all the other physicians collectively; but, on being made Professor, he relinquished the whole of it, because either that or his duties as a Professor must otherwise have been neglected. From this period, therefore, he attended only his friends and the poor.

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* Amoenitates academicæ seu Dissertationes variæ Physicæ, Medicæ, Botanicæ, etc. G. Dubois, 1748.

Physiology derived from him an important discovery, namely, Generationem ambigenam. Harvey maintained that the rudimentum futuri fœtus lies in ovi puncto saliente; Leeuenhoek, that it lies in genituræ verminulus spermaticis; Linné, on the other hand, that from the mother comes Carina Malpighii, rudimentum encephali, and from the father punctum saliens cordis, et inde totum corpus. This he proved by observations on hybrid animals, hybrid plants, etc. Thus, sense and temper, with tenaciousness of life, proceeded from the mother, but external appearance and habit, with strength of constitution, from the father. The Medulla spinalis would grow in infinitum if it were not confined by the spina dorsi tandem ossificata in pubertate; et a retropressione libido. The contrary happens in Tæniæ, and in vegetables which have no bone in their composition. Ossea crusta will grow infinitum, cæteris paribus. The object of respiration, he thought, is to extract the electric fluid from the air by the lungs and thus to transmit it to the medulla, becoming the spiritus animalis, as it were; and hence, that the chief office of the lungs is not to accelerate the motion of the blood. Some foreigner has considered this as an hypothesis only, but Linnæus as an axiom.

Pathology is a subject on which he corresponded more than thirty years with the learned Sauvages, above one hundred of whose letters are in his hands.

Genera Morborum have not been so clearly defined by any one; there is not a single word in them that is not useful; his work on this subject is an excellent compend for a tyro. He has divided fevers into three classes, after a method entirely his own: Exanthematicæ, typo scabici, ad exanthematibus vivis contagiosis; Criticæ, typo rheumatis (Fluss), ab acido seri sanguinis; Phlogisticæ, typo inflammatorio, a putrido cruoris sanguinis.

He was the first to explain that Tænia had no head and grows infinitum, and also that fragments of this creature sprout again.

That Lepra is caused by a species of Gordius, found principally in herrings, has since been confirmed by the Norwegians.

To show that Raphania is occasioned by the Raphanistrum required his thorough acquaintance with natural history.

He maintained that Scorbutus is caused by culinary salt.

Diet nobody has treated of in a more solid and satisfactory manner, though he did not publish anything on the subject. His doctrines, like those of the later natural philosophers, are deduced from experience, and his system, like theirs, may therefore be called experimental. Everything was deduced from occurrences in common life, cited in their proper places as examples, on which account his auditors were never more numerous than when he lectured on this subject. Several persons took notes at these lectures, but all the notes I have seen are incorrect.

Pathology, the foundation of the whole medical art and of all medical theory, has been more improved by Linnæus, in his Clavus Medicinæ of eight pages (which is a masterpiece in its way and one of the greatest treasures in medicine) than by a hundred authors and books in folio.

The Mechanical Physicians, indeed, had shown that the action of the Sapida consists in relaxing or constringing, according to the nature of their taste; but neither the species saporis, nor their contraries were explained—much less the nature of the Olida. Linné was the first who saw that nature is balanced by contraries, and acted upon numero quinario. He saw that the Creator had given to animals two senses, viz., taste and smell.

That the Sapida act only on the fluids and solids, or on the fibers.

That the Odora act only on the brain and nerves.

He found that Vitia Corporea, as well in the fluids as the solids, are only five in number.

That the Vitia Encephali, vel Systematis Nervosi are likewise five; each with the same number of contraries.

He likewise found that the Sapida and Odora are also five, with as many contraries, and that the right indication results from a comparison of contraries with contraries. He proved this by examples. What can be stronger?

For this was required all the knowledge that Linnæus possessed of diet, natural history, medicine, materia medica. Few physicians had been conversant with all these branches together. Fortunate were those students who, before his time, could acquire this knowledge.

Not to mention that Linnæus was the first who said that all our principal medicines are poisons; that physicians ought not to condemn poisons, but to use them, as surgeons their knives, cautiously.

The Materia Medica likewise was in a confused state, and many articles were imperfectly known until Linnæus reformed it. He introduced the genus, specific difference, select synonyms, place of growth, cultivation; deduced their medicinal effects and uses from the impressions they produce on the organs of taste and smell, and, lastly, described the several compositions, all of which had been either confounded or superficially treated of before, but by Linnæus were distinctly explained in his materia medica.

He was the first person who determined Sarcocolla, Balsam of Tolu quassia. He introduced several new articles; revived the use of others which had been forgotten: Ophiorrhiza, Fungus Melitensis, Senega.

Dulcamara. Linnæus was the first who brought this plant into general use in Sweden. He cured Syphilis and Scorbutus with it.† Virgo scorbuto summa afflicta, quam omnis generis remedia frustra essent adhibita, ejusque gradus ad summum pervenisset, Medicus Razout, concilio Sauvagesii, eam perfecte curavit solo usu decocti Dulcamaræ, quod remedium Sauvages ab Illo. Linnæo acceperat. Dulcamaræ decocto multos syphiliticos curavit Sauvages hujus usu à Linnæo edoctus.

Sauvagesium paucis ante abitum annis lippum, ut vix legeret librum, curavit Linné infuso caryophyllorum, ut ipse in literis fatetur "tibi debeo oculos meos."

Ledum. He was the first person who taught that it was the chief specific against the whooping cough.

Moschus. He was the first who introduced it for the cure of contagious diseases, and as a preservative or expellens horum, ex principio febrium contagiosarum ab exanthematibus vivis—now common.

R. Britannicæ (Rumicis Aquatici radix) applied to ill-conditioned ulcers, he was first informed of from America, and by him it was communicated to Europeans.

D'Ailland's powder he asserted to be (Pulvis) Baccarum Rhamni.

Guy's powder against cancer Foliorum Acteææ.

INJECTION TREATMENT OF SYPHILIS BY MEANS OF A NEW MERCURIAL FORMULA.*

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In 1853 Alex. Wood[1] of Edinburgh introduced hypodermic therapy. Mercurial injections were first administered by Charles Hunter and Barclay Hill,[2] two Englishmen, in 1856. Hebra[3] in 1864 made a vain effort to treat syphilis constitutionally by means of large injections of corrosive sublimate, and Scarenzio[4] one year later carried on more successful and prolonged investigations by means of calomel injections suspended in gummatous solutions. All the above mercurial investigations, on account of the severe painful reaction induced by their administration, were short-lived, and would have doubtless remained unnoted and obscure had not Lewin[5] aroused new and well-sustained interest in this now generally conceded important field of therapy, in 1868.

Mercury and mercury alone is the sheet anchor in the treatment of the earlier stages of syphilis. It matters

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† Act. Paris, 1761, p. 53.

* Read before the Ohio State Medical Society, at Toledo, May 29, 1902.

not through what avenue the administration takes place, lungs, intestinal tract or skin, or in what particular form—metallic, protoiodid, biniodid, sublimate, yellow oxid, red oxid, calomel, salicylate, foramid, sozoidol, tannate, etc.—it is administered, it is the assimiliated mercury which is effective; each preparation, and each form of administration has its peculiar advantages and objections, and the method which presents the happiest combination of large dosage, easy tolerance, convenient administration, absolute control and excellence in clinical results, will readily appeal to be the most acceptable and preferable.

The inunction method is the oldest, and though eminently reliable, efficacious, and very generally employed, it has its serious objections. The rubbing of a dirty ointment over the entire body is uncleanly, courts comment and publicity, soils bed linen and under-garments, frequently induces an artificial dermatitis, is contra-indicated in hairy individuals, precludes frequent bathing, and without the aid of an attendant is applied with difficulty. Inasmuch as mercury is volatile at ordinary temperatures, and more rapidly at body temperature, this form of administration is essentially an inhalation treatment, and as such, is strongly contra-indicated in hemoptysis and phthisis, an objection which applies to the inhalation treatment in every form, whether it be worn in sacks (Welander[6]), or as mercolint, (Blaschko[7]). Moreover the treatment is inexact.

The internal administration is a simple, convenient and popular form of treatment. It is eminently an inaccurate method because it is impossible to determine how little or how much mercury is assimilated. This is particularly true, if, as frequently happens, gastro-intestinal symptoms intervene, or if old, inspissated-gelatin-coated pills, or too strongly compressed tablets, are administered. The gastro-intestinal disturbance is often sufficient to distress the patient, impair digestion, induce loss of weight and to exert debilitating influences of considerable moment to this class of patients. What is probably the most serious of all objections, is the fact that the assimilated mercury, for the most part, is carried directly to the liver which, as we are beginning to believe, exerts a marked filtrating, altering and eliminating influence on toxic substances. This form of treatment also permits the patient to continue indefinitely, discontinue, or renew, treatment, in accordance with his own volition, and removes him from the regulating attention and vigilance of the physician.

Other forms of treatment—vapor baths, water baths, wearing of mercurial cloth, sacks, etc.—though useful as adjuvants, have not as yet received the stamp of general approval of being sufficiently active and reliable to merit special consideration in this paper.

The method of injection, which has been employed as already stated since 1856, has at times received popular favor, and at times has fallen into disrepute, according to the conditions which on the one hand recommend it above all other methods, and on the other, render it more objectionable. If the objections, which are largely technical, can be overcome the features which commend this form of treatment are so pronounced as to render the method justly popular and ideal. White[20] as early as 1894, when the method was relatively in its infancy, and its technic imperfect, in a series of interrogations addressed to all the leading writers and teachers of syphilology, demonstrated that the method at that time had come into very general and popular favor, and elicited the expression of a satisfactory past and an hopeful future. To Lewin[8] belongs the credit of demonstrating that the injection treatment can be successfully employed in supplanting with desirable effect the other forms of constitutional treatment of syphilis, an observation promptly confirmed by Sigmund[9] and Zeissl.[10]

Lewin[11] demonstrated by means of a series of 14,000 cases that the duration of treatment was shortened from ten to four weeks, that recurrences diminished from 80 per cent. to 40 per cent., and that rapidity of action, exactness of dose and immunity from gastro-intestinal disturbances, aside from the numerous objections to other forms of treatment, strongly recommended the method of injection.

For the injection treatment, mercury in almost every form, sublimate, calomel, yellow oxid, salicylate, soziodol, foramid, metallic, bicyanid, glycocoll, aspargin, alanin thymolo-aceticum and in almost every combination, albuminates, peptonates, benzoates, suspensions in mucilage, oil of vaselin, olive oil, paraffin, oil of sweet almonds, etc., has been employed. A brief survey of this unusual large field of literature and a careful estimation of its results will serve to demonstrate that also in injection therapy, efficacy and success depend, largely if not solely, on tolerance, convenience and dosage.

That the injection method, by meeting certain requirements, possesses decided advantages over other forms of treatment, is evidenced by the innumerable attempts at substitution; that these requirements have not as yet been satisfactorily fulfilled, is evidenced by the fact that nearly all have been short-lived or their use limited to relatively few individuals, and that the other forms of administration still find a large and generous patronage.

This paper will not permit me to enter into the consideration of the non-success of the many remedies which have been employed and recommended for injection use. It will suffice to say that bichlorid, which has been received into most generous favor, proved too painful to be well tolerated, causing patients to involuntarily withdraw from treatment, often induced abscess formation and severe induration, and could be administered only in such small doses as to require almost daily visits, which is ordinarily too expensive and too time-consuming for the patient. Pain, abscess formation and induration militated against calomel and salicylate injections, and graver complications against intravenous injections. A preparation which meets the requirements more successfully, I believe, than any other, is the ol. cinereum, or gray-oil after the formula of Lang.[12]

℞.	Lanolini	3
	Chloroform q. s. ad solutionem	10
	Hydrargeri	6
	Conteratur usque ad perfectissimam extinctionem hydrargeri.	
	Ol. vaselini	3

This formula, with the following modifications, has been almost exclusively employed by me, in both clinical and private practice for almost a year with most gratifying results. The injection as originally prepared, according to Lang, I found to be somewhat irritating and difficult to preserve. The modified form is prepared* by using bidistilled mercury, the same that dentists use in preparing amalgams. Six grams of bidistilled mercury can be readily incorporated in the course of a few minutes with two grams of lanolin when rubbed together in a clean mortar, which dispenses with the use of chloroform, which is a decided irritant, and is not, I believe, completely eliminated in the ordinary process of preparation. This simple modification did not suffice in itself to render the preparation as unirritating as desirable, and substitutions for oil of vaselin were successively tried with oleic acid, liquid paraffin, castor oil, cotton-seed oil, olive oil, etc., before a preparation was found which successively combined stability with nonirritability. This ingredient proved to be liquid albolene, which not only held the constituents well suspended and rendered them unaffected by ordinary temperature changes, but made the preparation so fluid that it could readily be utilized for injection purposes, though the mercury was increased from 50 to even 75 per cent.

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* Dentists exercise great care in the selection of a pure bidistilled metallic mercury for the preparation of silver alloy amalgams. The commercial metallic mercury obtainable from common sources will not form a satisfactory amalgam.

The following has proved to be an excellent working formula and can be readily prepared, with a proper regard for asepsis and cleanliness by an office girl of average intelligence.†

℞. Lanolini 2
Hydrargeri bidistil. 6
Conteratur usque ad perfect extinctionem hydrargeri.
Liq. albolene 2
Sig.: Inject one grain (.06) every three or four days.

This preparation can be readily drawn into a hypodermic syringe, the needle applied and successive doses measured off by means of the retaining screw until the syringe is exhausted. One additional syringeful can be held in reserve and in this manner the treatment of each individual patient requires but a few moments of time. The injections should be made preferably into the buttocks at their most prominent aspect, alternating from right to left with each successive injection.

It has been my rule to give an injection every fourth day, using a grain dose (which contains approximately one and one-third grains of metallic mercury), and continuing until fifteen injections have been administered, that is to say, at least twenty grains of metallic mercury. In many cases I increase the dose to almost two grains, according to the indications, without untoward results. By this method relatively ten times more mercury is administered with each injection than with the regulation 15 grains of the 1 per cent. bichlorid, foramid or succinamid solutions, and more than twice the amount in the regular injections of calomel, salicylate, thymolo-acetate, yellow oxid, etc.

In all cases where the patient showed no marked intolerance to the remedy and remained free from complications, the injections were made at regular four-day intervals, and in many cases with a slightly progressive increased dose. My personal experience had impressed me that there are no special indications for a progressive decreased dose, and a gradual prolongation of the intervals between successive injections, as strongly urged by Ullmann,[13] Lang,[14] et al., in order to prevent any accumulative action and a consequent unfavorable action in such resulting complications as ptyalism, mercurial nephritis, etc. Mercurial stomatitis was carefully avoided as far as practical by exercising great care of the teeth, but, when it did ensue, as it is frequently wont to occur in clinical practice, its course was apparently scarcely more severe or intractable than that resulting from other forms of treatment.

In recent infections the injections were instituted with the appearance of the roseola, in accordance with the well-sustained views of Düring,[15] Taylor,[16] Watrazewski;[17] three courses of fifteen injections are administered during the first year of infection, two courses the second, one the third, and one every two or three years thereafter.

A seven-eighths inch 22-gauge steel needle is employed, which insures that the injection is deposited deeply into the layer of subcutaneous fat; the injection is supplemented with a few moments of gentle massage. In the beginning the injections were made with a needle one and three-eighths inches in length, in order to insure insertion into the deep muscles; experience soon taught that these injections were unnecessarily painful and poorly tolerated. It is not my practice to remove the syringe from the needle after insertion, as recommended by Lesser,[18] in order to test hemorrhage, and in more than 2,000 injections which have been made to date I have yet to note the slightest symptoms of embolism in the form of syncope, cough, pain in chest, shortness of breath. (Watrazewski, Quincke, Ludstrom, Oedmansson, Blaschko, Epstein, etc.) The clogging of needles, an objection which has been raised against the use of insoluble preparations (Bayet),[19] does not attain to this particular preparation; one needle suffices for more than a hundred injections, and is weakened and destroyed by erosion before it becomes plugged.

During the past twelve months, out of a total experience embracing 240 cases of syphilis, the injection treatment, wherever practical, was exclusively used, so that more than 2,000 injections were administered. Cases that had not attained puberty or where esthetic objections were offered, were excluded. The method has been employed sufficiently long, and the number of cases and injections have been sufficiently large, I believe, to warrant the unqualified statement that the results, as regards tolerance, excellence of clinical results, absence of complications, convenience and general efficacy, have exceeded the most sanguine expectations. This opinion is also shared by those of my colleagues in whose hands I have placed the remedy, whose impartial, unprejudiced and unbiased judgment gives it much additional weight.

Pain over the site of the injection is seldom noted. If present, it is usually slight and manifests itself for the most part during the second 24 hours. Its slight and transient character when present is best evidenced by the fact that patients submit willingly to the treatment and seldom voluntarily withdraw from treatment, even though they belong to the clinical ambulatory class. Induration over the site of the injection is usually slight and often imperceptible. Exceptionally patients show an idiosyncrasy to such a degree that localized pain and induration become so severe as to indicate a change to some other form of treatment; these patients often acquire tolerance, especially with diminished dosage. A change to some other form of treatment became necessary because of pain and induration in eighteen cases, or in about 10 per cent. of the cases treated. Abscess formation occurred in a single case, and was induced by careless administration of the injection in the hands of a student in a clinical case; the needle entered obliquely and the contents were deposited subcutaneously.

Marked improvement was noted in all the cases; material gain in weight, rapid amelioration of symptoms, improvement in appetite, color and activity were evident. A few cases responded promptly to this form of treatment that failed signally with other forms, and others.

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† In warm weather, some of this liquid albolene separates from the preparation, and floats freely on the surface, which gives the mercury a doubtful percentage. This can be easily remedied by the following modification in what may be conveniently termed the "summer" formula.

℞. Lanolini .... 1|0
Hydrargeri .... 4|0
Conteratur usque ad perf. extinctionem hydrargeri.
Liq. albolene .... 1|0
M. Inject one-half grain every three or four days. One-half grain by volume contains approximately one grain of mercury by weight.

t showed intolerance to internal medication or in-tions, readily tolerated the injections. A case of tiple cutaneous gummata, in a physician, following long-standing extragenital infection, responded nptly to six ill-tolerated injections, after inunctions, rnal administrations and potassium iodid in large s had failed to favorably influence the condition. ase of severe syphilis, associated with progressive matous infiltrations and destruction of tissue, yielded nptly and completely to one course of injections, and after other methods and large doses of potassium iodid failed to benefit. Clinical examples of this character could be multiplied almost indefinitely, but it will suffice to state that, in point of efficacy, the treatment embraces all that is desirable, and that patients experience marked improvement, not only during the treatment, but a state of well-being that persists for many months after the treatment is suspended. In the vast majority of cases the patients show the greatest tolerance; in a few, owing to inexplicable idiosyncrasy, the distress is severe enough to render the treatment uncomfortable or a change to some other form highly desirable if not imperative. Taken all in all, its greater tolerance and the absence of complications should give this formula the preference over other forms of injections, and with the improvement in these directions the other natural advantages which accrue to the injection treatment over the internal and inunction methods, should give it the high and important place in syphilitic therapy which my personal experience during the past twelve months leads me to firmly believe it justly and deservedly holds. It has not, however, reached as yet that high state of perfection which bids it to entirely supplant all other forms; both the internal and inunction methods will still play very important rôles, not only as separate forms, but also when combined with each other or with injections, in accordance with the special indications. Every modification which renders the injections more tolerable and, at the same time, removes the likelihood of complications, is a step nearer the goal, and, inasmuch as the obstacles leading thereto are almost purely technical, it seems not at all unlikely that this goal can and will be reached as soon as mercurial injections attain the same relative tolerance that iodin injections have recently attained in iodopin.

One word of caution should be sounded in the use of this preparation: It is best to begin the treatment with a minimum dose (¼ to ½ grain per injection) and to gradually increase to 1 grain or more, in accordance with the degree of tolerance manifested by the patient. Great care should be exercised that the technic is properly carried out, and that a syringe, provided with a retaining screw, is employed; the screw should be properly set to guard against an excessive dose. These features should be forcibly impressed because their inadvertence in the hands of a few colleagues has been followed by untoward results. In one unfortunate instance an injection was made into the calf of the leg, instead of utilizing the gluteal region.

To recapitulate, the success of syphilitic therapy depends on the amount of mercury assimilated by the body, no matter in what form or through what avenue it is administered. Inunctions are objectionable because they are uncleanly, court comment and publicity, entail inexact dosage and predispose to dermatitis. The internal treatment is inaccurate, predisposes to gastro-intestinal disturbances, emaciation, anemia and the assimilated mercury is subjected to the altering, filtering and eliminating action of the liver. The injection method dispenses with all the above objections and combines with rapidity of action, relative greater efficacy, shorter treatment, diminished recurrences. Its strongest objections, in all its various forms, have been intolerance (local, pain and induration), grave complications and small and too oft-repeated dosage, instability, difficult preparation and administration of the remedy. These objections have been in a measure relieved by the above modified formula of oleum cinereum.

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TREATMENT OF TUBERCULAR PERITONITIS.

WITH THE REPORT OF A UNIQUE CASE.*

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The opinions advanced in this paper are based on a study of the literature of the subject and a personal experience in the operative treatment of twelve cases. The time and the occasion make it incumbent on me to express myself concisely. No attempt, therefore, is made to explain in detail the reasoning nor the observations on which the opinions are based.

VARIOUS CURATIVE AGENCIES.

All forms of tuberculous peritonitis have been known to recover under medical treatment alone. All recoveries from tuberculosis of the peritoneum which follow operation can not be said to be due to the operation. The percentage of cures following operation is probably not so high as one is led to believe by the statistics of operators. The mortality of operation *per se* is not underestimated.

Celiotomy has a decidedly curative effect. This effect is due, not to any single cause, but to several. There is good reason for believing that all the theories offered are founded upon facts, but no single theory will explain all the cures.

LIGHT AS A CURATIVE AGENT.

The importance of the curative effect of light and air are, I believe, underestimated by most authors. Generally speaking, the best results have followed those operations in which the peritoneum was freely exposed both to light and air. All forms of the disease have been cured by operation, although the ascitic form has yielded the best results and the ulcerating and caseating forms the worst. Other foci are benefited by operation, so that

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the existence of tubercular deposits, in the lung, for instance, adds another reason for operation in a given case, rather than against it.

OPERATIVE TECHNIC.

The operative technic in tubercular peritonitis should be such as to give the patient the benefit of as nearly all of the known curative agencies as is possible with the use of good judgment. The inoculation of a tuberculous peritoneum with putrefactive bacteria is a procedure too dangerous to be practical. Incision should be free; fluid, if present, completely removed; tubercular foci, if accessible and not too numerous, should be removed. Adhesions should not be disturbed save when necessary for the removal of tubercular deposits, fluid or the relief of bowel obstruction. An exception to this rule should be made in those cases in which the adhesions are easily separated and extensive enough to prevent free access of light and air. Drainage is dangerous and should not be used except in cases of mixed infection. Lavage with hot water is not injurious and may be beneficial. Chemical antiseptics should not be used save in mixed infections. The abdominal cavity should be freely exposed to light and air for several (ten to fifteen) minutes. I can conceive of no valid ection to the exposure of the cavity either to the r the ultra-violet rays of Finsen. I would ad- l of both of these agents, and am preparing to atter in the next case coming to me for treat- That actinic light will penetrate the human body seems proven, but there seems to be sufficient reason for believing that the efficiency both of the x-rays and actinic light, in the treatment of tubercular lesions, is much enhanced by exposure of the lesion to the direct influence of the rays.

There is good reason for believing that operative treatment along the lines indicated above, coupled with direct exposure of the abdominal cavity and contents to actinic light, or to the x-rays, will prove a better method of treatment for tubercular peritonitis than any other yet devised. In case the actinic light or the x-rays is not available, the cavity and contents should be freely exposed, for several minutes, to the strongest light that is available.

REPORT OF A UNIQUE CASE.

median line for a distance of three inches between the umbilicus and pubes and through this incision discovered for the first time the true nature of the trouble. The peritoneum forming the sac was studded with tubercles. The roof of the sac was formed by agglutinated intestines and stretched across the abdomen, about on a level with the iliac crests. The pelvic contents were healthy save that the peritoneum covering them was studded with tubercles. The cavity was emptied of fluid, wiped dry, the hernial sac excised and both wounds closed with catgut sutures, including the skin. The patient's recovery was uneventful and she is now (eleven months after the operation) enjoying apparently perfect health.

It is proper to note here that after leaving the hospital, she was treated by Dr. Drayer, her physician, for two months by abdominal inunctions of Credé's ointment and the internal administration of hypophosphites, and was given the full benefit of the sunshine and open air.

Thomson[16] has had three cases in male children in which there was tuberculosis of the patent vaginal process coexistent with general peritoneal tuberculosis. The cases were cured either by simple incision of the process or by excision of it. Gould also says Harold Stiles, Goldman and others have reported similar cases. I have not been able to find the reports of Stiles or Goldman. Jordan[75] reports a case of tuberculosis sicca of a large irreducible inguinal hernia. After an exploratory incision, the hernia became reducible, the patient's health improved and the thick masses found at the time of the operation largely disappeared, but a sinus which discharged thin pus still remained. Naumann[44] reports two cases of congenital hernia with peritoneal tuberculosis in which he withdrew the fluid through the hernial opening. Further details of Naumann's cases are not given in the abstract referred to and the original[76] article was not available when this was written.

These are all the cases similar to mine of which I could find the reports. It will be noted that mine is unique in that the hernia was acquired and consisted only of sac and fluid contents.

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DISCUSSION.

Dr. Joseph Ransohoff, Cincinnati—It is very evident that no one method is going to be of advantage in all cases, and also that very many cases of so-called surgical tuberculosis get well under medical treatment. It is perhaps an inopportune time to discuss this subject, so far as the surgical aspects are concerned, but it seems that the time is not far distant when the *x*-ray will be enabled to make a surgical operation superfluous in some cases. In cases which have apparently gotten well and in which relapses made second operations necessary, where the *x*-ray had been used in the meantime, such a change had taken place in the tubercular nodules as to make one feel some remarkable good was accomplished by the *x*-ray. In two of my cases of ascites I did nothing but drain. Both recovered perfectly, and both young women are now in good health. One of these cases is of 7 years' standing. I did not go to the radical procedure of removing the tubes, although it has been said that it is just as well to do so, in order to prevent tubercular progeny. We have all seen tuberculosis of the male gland treated simply by incision and in whom subsequently the possibility of enjoying parentage was not interfered with. Are we justified in coming to the conclusion that a tubercular tube must be removed any more than a tubercular testicle should be? Conservatism is the order of the day in one and why not in the other. In these cases it has been my experience that the less the interference the better and we should not interfere unless we have to. The danger of postoperative generalization of the disease must not be overlooked.

Dr. A. E. Halsted, Chicago—My experience in the operative treatment of tubercular peritonitis is limited to eight cases. One of these cases demonstrates that operative treatment is not always successful, and that it is not, as is generally supposed, devoid of danger. This patient died as the immediate result of operation. A second case demonstrates that complete recovery is possible, even where there is extensive glandular involvement.

My opinion is that light and air have very little effect on this condition. It is difficult for me to see how such short exposure of the peritoneum to the air and light could affect materially well-developed tubercles. My experience in this disease leads me to believe that the good effect of the operation is due entirely to the reaction that follows the trauma to which the peritoneum is subjected. Gatti demonstrated in his experimental work on tuberculosis of the abdomen, that the disappearance of the tubercles and cicatrization which resulted after operations for tubercular peritonitis, was the result of the bactericidal action of the exudate that followed opening of the peritoneal cavity. He further found that this exudate which corresponded in its chemical properties to blood serum possessed a greater bactericidal action than does normal blood serum. From this, it is my opinion that the operation will be followed more frequently by cure if we resort to swabbing and irrigating the peritoneal cavity. I do not believe that any chemical substance that can be used with safety in the peritoneal cavity is of much value in the cure of peritoneal tuberculosis. Undoubtedly the good effects that have followed the use of iodoform are due to its action in producing traumatic peritonitis. As to the breaking up of adhesions, I have found that it can not be done with safety to the patient. In these cases, where the adhesions are very extensive, it is better to limit the operation to the opening of the peritoneal cavity to evacuating the fluid and swabbing the surface of the diseased membrane with salt solution. In cases where we have a number of circumscribed, sacculated exudates, I consider that each of these cavities should be opened and drained. I am not in favor of immediately closing the abdomen in these cases, but believe that considerable benefit follows drainage.

As to the etiology, we now know that by far the greatest number are from infection that spreads from the pleura, or lung, and that it is only in rare cases that the primary focus can be demonstrated in the tubes. We must also remember that where the tubes are found diseased that this condition may be secondary to the abdominal tuberculosis.

As to the prognosis after operative treatment, it may be said that the best results are to be had in those cases with the ascitic form of tuberculosis. In these, a definitive recovery may be expected in from 40 to 50 per cent. In the adhesive form, the prognosis is very much more unfavorable, only about 15 or 20 per cent. recovering after operation. In the ulcerative and suppurative form, operation is, in my opinion, practically useless. As to the value of removing the tubes in these cases, I believe that it will be difficult to determine in any case positively whether or not the tubes are the primary seat of disease. If for any reason we suspect they are, it would be only rational to remove the tubes at the time of operation.

I wish to report two cases that are of peculiar interest, inasmuch as one illustrates a complete cure, and another a fatal termination:

Case 1.—Miss D. Young woman, unmarried, aged 19, had up to two weeks before been well. At that time she noticed that the abdomen was larger than usual. This rapidly increased and was associated with indefinite abdominal pain and obstinate constipation. There was some dysuria and a decided diminution in the quantity of urine. On examination the abdomen was found considerably distended and there was free fluid in the abdominal cavity. The thorax was negative, as were the liver and pelvic organs. There was no definite abdominal tumor and the general appearance was fairly good. The skin was decidedly pigmented, so that it had a bronzed appearance which suggested Addison's disease. The sclera was icteric.

There was a slight puriform vaginal discharge which on examination showed no tubercle bacilli or gonococci. At the end of the week she was operated on.

A second examination before operation showed an area of dulness which extended from a point half-way between the ensiform cartilage and the umbilicus and pubis. This area was wider in the meso-gastrium than above and below, measuring at its widest part about four inches. On palpation there could be felt a distinct tumor mass, spindle-shaped in outline and giving the sensation of fluctuation. This was freely movable latterly, but appeared attached above and below. On each side of this dull area there was a tympanitic area on percussion, until the area of free abdominal fluid was reached. A diagnosis of abdominal tuberculosis was made by excluding other forms of ascites. There was no history of tuberculosis in the family.

Operation.—The abdomen was opened by a median incision, and a large quantity of straw-colored fluid escaped. The intestines were found adherent in many places; it was closely studded throughout its entire extent with small miliary tubercles. The bursa omentalis was rolled on itself and in its lumen was fluid. The lower end of the omental tube was attached to the anterior abdominal wall close to the pubis. No attempt was made to separate the inherent coils of intestine. The fluid was evacuated as completely as possible and then drained.

The patient's condition during the first twenty-four hours following operation was not materially changed; temperature normal, pulse rapid and mind clear. At the end of the first twenty-four hours she was suddenly attacked with severe epistaxis. This was controlled by plugging the nares. Within a few hours hemorrhages began from all the mucous membranes. At the same time large purpuric spots appeared on the chest and the extremities, which increased in size and number until the entire surface of the body was covered. Intermuscular hematoma also developed. The temperature rose to 100 F., pulse gradually became imperceptible and she died in coma thirty-six hours after the operation.

(Discussion continued on p. 624.)

FURTHER EXPERIENCES WITH A MODIFICATION IN THE OPERATIVE METHOD FOR INVETERATE RELAPSING AND ALL AGGRAVATED FORMS OF PES EQUINO-VARUS.*

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OMAHA.

Congenital deformities involving chiefly the mediotarsal joint come so frequently to our notice that they seem to have lost interest. Manipulations, brisement forcé, tenotomies and retentive appliances when carried out with judgment and patience in time tend to recovery in a large number of cases. When these corrected deformities pass from under the observation of the surgeon the results are designated as satisfactory, meaning by that, that the plantar surface rests squarely on the floor and that walking is accomplished, not perfectly, for there is still a slight limp, a slight toeing inwards, possibly a moderate rolling inwards of the entire extremity. The patient and friends are cautioned that relapse is possible and probable if corrective measures are at once abandoned. Your injunction, it is one thing to correct a deformity and an entirely different and more important matter to keep it corrected, is given with emphasis in the hope that it will be heeded. It is a well-known fact that individuals often tire of prolonged attention and care so needful to make permanent a certain result. Consequently, many cases recorded as cured return after a lapse of time, partly or completely relapsed. Often the deformity has become aggravated to an extreme degree, so that the outer and upper side of the foot is the surface bearing the superimposed weight, the plantar surface pointing inward and backward, presenting a well-known type known as inveterate and relapsed talipes equino-varus. Every surgeon is brought face to face with relapsed cases of his own, he sees more who have been in the hands of other surgeons. It is impossible to repress the desire for some method that promises greater certainty as to permanency. He has found that gradual corrective measures, or operative procedures that involve a long post-operative treatment are unsatisfactory, chiefly on account of indifference on the part of the patient or his attendants. Constant attention is necessary; retentive apparatus is early broken or is rapidly outgrown, requiring frequent renewal, creating an expense unwillingly borne. Unfortunately, the vast number of cases of foot deformity are found among the poor, who can ill afford the necessary appliances. They have not the means nor the time to devote to the proper attention demanded by such a case. The indications are plain. Some plan must be devised whereby a pes equino-varus may be corrected which is unattended by a prolonged after-treatment.

NATURE OF THE DEFORMITY UNDER CONSIDERATION.

The deformity that shall engage our attention for a few moments consists of a deviation inward and downward of that portion of the foot chiefly anterior to the medio-tarsal joint, causing the superincumbent weight to be borne on the outer and often the dorsal side of the foot, with a shortening of all the soft structures on the concave side of the deformity, consisting of the skin, superficial and deep fascia, fibers of the internal fasciculus of the plantar fascia, the adductor hallucis muscle, internal plantar nerve and artery, the tendon of the tibialis posticus and anticus, internal lateral and calcaneo-scaphoid ligaments. The soft structures on the outer or convex side of the deformity are elongated. The tarsal bones have become modified in accordance with their abnormal relations to each other.

HOW THE DEFORMITY MAY BE OVERCOME.

The indications to be met consist in elongating the shortened soft structures, replacing the bones, dividing and excising on the convex side of the deformity such hypertrophied and distorted osseous structures as interfere with complete replacement. Whether this is accomplished by force or by subcutaneous or open-cutting operation the tendency to recurrence must always be taken into account, therefore, over-correction has become the rule. And yet this over-correction has not always been sufficient to prevent recurrence. All operative and mechanical methods require repeated sittings, extending over a considerable period of time, making it irksome to the patient, and he frequently passes from observation before the cure is complete.

THE PHELPS OPERATION.

Phelps, in 1881, made the most radical departure from the then prevailing methods, by boldly cutting all the soft structures on the concave side of the deformity and then forcing the foot into a valgus position. His earlier efforts were followed by partial recurrence of the deformity owing to imperfect antisepsis.

When Schede made known his observations on healing under a moist blood-clot in bone cavities, its application found a place in the Phelps operation. The wound was covered with a silk protective, retaining a blood-clot under it, insuring a more rapid reparative process and a less degree of recurrence. Many modifications of the Phelps method have been undertaken, chiefly by Mr. Arbuthnot Lane, F. H. Kellock and Muirhead Little, with the aim to cover the large wound, and Dr. William Gardner sought to overcome the osseous defects by inserting between the scaphoid and astragalus a wedge of decalcified bone to fill the space resulting from correcting a severe varus deformity.

THE AUTHOR'S METHOD.

It was the writer's privilege to present to the Western Surgical and Gynecological Association at its Omaha meeting, a modification which has proven useful in the hands of several surgeons, in permitting immediate correction of the deformity and at the same time guarding against recurrence. The steps leading to the adoption of the plan were made after personal trials of various skin-flap operations, both pedunculated and free. They possessed the drawback of the liability to necrosis from inefficient blood supply, and yet integument was the only tissue that could cover the large gap in the Phelps operation. It was evident that if an attached flap with a broad pedicle could be produced that under all circumstances could contain a sufficient blood supply to insure its life, at the same time cover a greater part of the wound, more particularly the deeper part of the wound produced by the severed fascia, tendons, muscles and ligaments, we should make an advance toward more rapid repair and obviate to a large degree relapses.

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It was proposed to make a triangular flap, similar to that sometimes used in relieving Dupuytren's contraction of the hand, a V-shaped incision as advocated by Busch and others for cicatricial contractions after burns on the flexor sides of the extremities. An incision was made, beginning slightly below the margin of the plantar fascia on the inner side of the foot, at a point on a line directly below and anterior to the internal malleolus, extending forward and upward to a point on the first metatarsal bone and nearly to the metacarpo-phalangeal joint. A second incision was made, beginning at a point over the astragalo-scaphoid articulation, extending forward and slightly downward, joining the first incision near the meta-tarso phalangeal joint, forming a V. The incisions were deep so as to include all the subcutaneous structures, including the fat. This flap was dissected backward to the points where the incision began, producing a large triangular wound, making it possible to divide all the necessary structures under the guidance of the eye. All the soft structures were thus exposed. The inner fasciculus of the plantar fascia was divided diagonally. The diagonal division of the plantar fascia was done, so that after correction there should be left no defect between the divided ends, but that the points of the incised fascia should still lie in contact, thereby lessening the tendency to contraction. The remaining structures were then divided as directed by Phelps, until the astragalo-scaphoid capsule was reached. Instead of dividing this, another incision was made on the outer side of the foot over the head of the astragalus, extirpating first the bursa which is usually present, then the tendons and soft structures were pushed to one side and the neck of the bone was exposed. The neck of the bone was then cut with a chisel. The foot could then be pushed outward without separating the astragalo-scaphoid articulation, which nearly always occurs in the Phelps operation. Occasionally, in old and inveterate cases, it became necessary to make a cuneiform excision of the neck, and in several instances the neck and head of the astragalus were removed. The varus having been over-corrected and turned into a valgus, the equinus deformity was relieved by a subcutaneous division of the tendo Achillis. All hemorrhage was easily controlled with catgut ligatures and pressure. The triangular flap was then turned back; it covered the wound except at its anterior point. No sutures were employed. A perforated silk protective covered the wound. The outer wound over the astragalus was closed with catgut. An antiseptic dressing was applied and over this a retentive dressing of plaster of paris, beginning at the toes, extending upward above the knee, including one-third of the length of the thigh. The dressing was not disturbed under five weeks. The wounds were then completely healed.

ITS VALUE PROVEN BY EXPERIENCE.

Further experience with this method has demonstrated its usefulness. An increasing experience has given an increasing confidence. The triangular flap falls of its own weight over the defect left by the retreating severed soft structures, entirely preventing the shelving edges found in the original Phelps operation. The healing process is shortened on account of the smaller surface to be covered by the process of epidermization. The astragalo-scaphoid ligaments were not severed, avoiding an opening of this joint, consequently preventing the great gap between the articular surfaces, which is unavoidable in the combined radical cutting followed by forcible correction. It was found that the axis of the neck of the astragalus had deviated inward in old cases so that the articular surface of its head was inclined inward, offering a most stubborn resistance. No amount of force could overcome this. A transverse division of the neck with an osteotome in nearly all cases permitted a replacement of the anterior part of the foot with very little force and the astragalo-scaphoid joint was not opened. In several instances a cuneiform excision from the astragalus neck with a sharp, bone-cutting forceps was required for complete reduction. In a few very advanced cases the head of the astragalus had to be removed. In two instances the astragalus was so rotated that its superior articular surface was inclined outward to a degree that it rested in part against the fibula, necessitating a division of the internal lateral ligament, before the bone rested normally against the tibial articular cartilage.

The triangular flap, although at first employed for old and relapsing cases, is now used wherever force and subcutaneous tenotomies are inefficient, whether the cases are recent or old.

CONCLUSIONS.

In conclusion we may say that:

1. The triangular flap is indicated in cases of pronounced talipes equino-varus wherever an open operation is necessary to overcome the deformity which involves the medio-tarsal joint.
2. The astragalo-scaphoid ligaments and capsule must not be incised or torn.
3. When the division of the soft structures is not sufficient to overcome the varus deformity an incision over the head and neck of the astragalus must be made and the bursa extirpated.
4. The neck of the astragalus must be divided transversely with an osteotome. If this is not sufficient, then remove a wedge from the neck; if that fails, remove the head.
5. If the astragalus has rotated so that its superior articular surface is inclined outward, and a replacement is impossible, the internal lateral ligament must be divided, which can be done through the opening made by the triangular flap.
6. The best possible guarantee against relapse is to divide soft parts and bone, so that the foot falls into its natural position with little or no pressure.

The French System of Prophylaxis Against Tuberculosis.—Professor Phocas of Lille remarks that the sanatorium treatment of tuberculosis can be called the German system, and superabundant feeding the English system, while the seashore children's asylums can be called the French system of combating tuberculosis. The French have a number of well-equipped and well-managed seashore hospitals for children, and the aim is to send to them scrofulous and other sickly children and transform the predisposition to tuberculosis into sound health. The *Nord Méd.* of August 1 commences the publication of the annual report of the sanatorium at St-Pol-sur-Mer, in charge of Phocas, which shows how much can be accomplished in this line.

THE PREVENTION OF DEFORMITY.[*]

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While the entire medical profession of this generation are earnestly striving to better the condition of the human race by the prevention of disease, it seems an opportune time also to enlist their efforts toward the prevention of the many deformities of the body which surgeons are called upon to treat. That great results have followed the establishment of proper quarantine regulations is admitted by all, and the wonderful change in the conditions of Havana and other Cuban cities since the American military surgeons have been placed in control of sanitary affairs, is a matter of sincere congratulation and the good effects will be far-reaching. In many other directions preventive medicine is attracting the attention of the entire world, and no subject is more thoroughly discussed to-day than the prevention of tuberculosis. While authorities may differ as to how the result can be best and most speedily accomplished, all agree that it must be done. On this last point there is no difference of opinion. But while medical men admit that deformities of the body will occur unless certain precautions are taken to prevent them, the vast majority of patients coming to the surgeon for the relief of deformity clearly state that nothing was ever done to prevent its occurrence. That this subject has not received the attention it deserves will be admitted by all.

The desire to prevent unnecessary suffering, to prevent deformity, to obviate the necessity of surgical operations and the wearing of apparatus should be the aim of every medical man who is called upon to treat a patient whose disease is of such a character that unless proper treatment is given, deformity will follow, yet most cases of infantile paralysis, chronic joint disease, burns and many other conditions are treated only with the idea of curing the diseased condition, and no attention is paid to the resulting deformity. From an experience in public work at the Hospital for the Relief of the Ruptured and Crippled in New York City and from private records, the writer believes that more than half the deformities seen could have been prevented, and the time will come when they will be, and the long list of operations for the correction of deformity following infantile paralysis, chronic joint disease, faulty decubitus in typhoid fever, rheumatism and other conditions, will no longer figure so prominently in the records of work done by the surgeon.

Practically all the deformities due to poliomyelitis or infantile paralysis can be prevented. "The original lesion does not primarily produce a deformity, but simply a loss of power in the muscle or muscles affected. The production of deformity is due to: 1, gravity; 2, the action of non-paralyzed muscles; 3, the arrested development and growth of all tissue in proximity to the muscles paralyzed; 4, the results of weight applied to the weakened structures; 5, all other causes."[1]

"The contractures may come on very slowly, and in the foot, after several years, there may only be a slight equinus, yet that equinus, by the patient's endeavor to walk flat on the foot, may be the cause of a most severe hyperextension at the knee and much subsequent trouble."[2] Thus we see one deformity causing another, and, had the first been prevented, the subsequent care of the patient would have been much simplified. Most of the deformities are of the lower extremities, because it is more often affected, and because the various causes that produce these results have better opportunity here than elsewhere, and some form of clubfoot is the condition needing treatment. The varieties of clubfoot are many, and the non-congenital are nearly all preventable by simple treatment and by a clear recognition of the fact that unless care is taken they will occur. Non-congenital clubfoot may be divided into: 1, simple acquired; 2, paralytic; 3, traumatic.

1. Simple acquired clubfoot includes all cases due to rachitis, rheumatism, chorea, hysteria, malaria, chronic ergotism, faulty positions in standing, tumors, weak ankles, relaxed ligaments, sprains, diseases affecting hip, knee, leg, foot or ankle, non-paralytic, as synovitis, arthritis, caries, necrosis, osteomyelitis, etc.
2. The paralytic includes all cases due to poliomyelitis anterior, hemiplegia, meningitis, myelitis, progressive muscular atrophy, spastic cerebral and spinal paralysis, compression myelitis, irritation of pyramidal tracts, syringomyelia, etc.
3. The traumatic includes all cases due to fractures, dislocations, injuries to skin, fascia, muscles or nerves, burns and cicatrices.

"In an analysis made in 1890 of 7,101 cases of clubfoot seen by different observers, 3,601, or over half, were non-congenital in character, showing the accuracy of the statement that fully half the deformities seen are preventable."[3] By manipulation, massage, light retentive dressings, of wood, paper, felt, leather, plaster of paris, silicate of soda, steel, etc., any portion of the body can be so kept that the various causes mentioned can not exert their harmful influence and deformity can be prevented and this is especially true of non-congenital clubfoot.

In chronic joint disease the proper treatment consists in the cure of the disease without deformity, but how often is this accomplished? "Osteitis of the knee, involving either the lower end of the femur or upper end of the tibia, or both bones, with or without destruction of the joint, is followed in about 50 per cent. of the cases by deformity."[4] The same is true of the hips, and certainly these results are not what they should be. Following burns of the various parts of the body, deformities often occur, and in most cases could and should have been prevented. Contracted fingers, elbows drawn to such an extent that the hand nearly touches the shoulders, feet in marked equinus or calcaneus, extreme torticollis are illustrations familiar to all surgeons. After operations on bone, deformities often occur. They are due to failure to realize that although an excision of the knee has been skilfully performed, yet the union is not firm enough to support the body weight for many months. "For the prevention of flexion deformity it is necessary that apparatus be worn for a very considerable period after the operation,"[5] and this is also true of other articulations. After operations on muscles for the relief of deformity, care must always be taken lest the same recur.

To faulty decubitus in any form of illness many deformities are attributed, and these can nearly always be prevented. A flexed knee, a contracted heel-cord, a deviated spine, are familiar examples, requiring subsequent tenotomies, myotomies and even operations on the bony system for their correction. The amount of damage done in this manner is but little appreciated, and to recommend that the knees of every typhoid patient be stretched daily, or even fastened to a straight posterior splint would probably cause most medical men to believe that the one suggesting it had lost his reason, but the writer has seen subluxation of the tibia and such extreme hamstring contraction follow in some cases that, despite the best efforts of the surgeon, the knees could never be restored to their normal condition. Every surgeon can recall instances where forcible stretching and myotomies had to be done for the relief of deformities that the patient could have prevented had the family physician or nurse simply made the suggestion that the knees or feet be occasionally stretched.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

In synovitis, in rheumatic joints, in septic conditions of soft parts or articulations, the possibility of faulty positions becoming permanent should always be taken into consideration. A shortened lower extremity from any cause, a tilted pelvis, an inflamed joint or inflammation of the soft parts may lead to spinal curvatures that should have been prevented, and it is the duty of all to see that such deformities do not occur.

Faulty position in school, the carrying of undue weight on one side, the failure to properly maintain the erect position are all familiar conditions that lead to deformities that are in most cases easily prevented, and many more examples could be cited. Toe drop from the application of splints, of bandages for knee or hip disease, for fractures, dislocations, sprains or diseased conditions of any kind, is a preventable deformity, because if the foot is kept at a right angle with the leg it will not occur.

Permanent stretching of muscles, as in wrist drop, etc., from palsy of any cause, such as poisoning from lead, can be prevented by simple means; yet many treat the disease and pay no attention to the prevention of deformity. Many congenital deformities are most amenable to treatment, such as the slight degrees of clubfoot, but if treatment is delayed for any cause, the deformity becomes serious and most difficult to treat.

The prevention of deformity, therefore, should be clearly impressed on all those who are called upon to treat any condition that may lead to it, and once it is clearly understood that certain deformities frequently seen can be prevented, many a patient will be spared much inconvenience and subsequent trouble. The extreme deformities often seen might also have been much less marked in many instances if the fact had been recognized in early life that certain precautions should always be taken to prevent their increase, or to prevent other deformities from occurring.

The prevention of deformity is a subject that must be attended to by the family physician, because the surgeon is rarely called until it has occurred. He is asked to correct it by the use of the knife or by some other method, but his best efforts are often disappointing to all concerned, although in most instances he can relieve the condition, if not entirely overcome it.

The methods to be used in preventing any particular deformity will readily suggest themselves to the physician, or can be found in most of the works on orthopedic surgery, and need not be referred to at this time. The plaster of paris dressing is, however, one that can be recommended in many instances, and is cheap and always obtainable. Early and correct diagnosis and the recognition that deformity does occur in many cases must be impressed on all medical men, and then the prevention of deformity will necessarily follow.

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DISCUSSION

ON PAPERS OF DRS. JONAS AND TOWNSEND.

DR. H. L. TAYLOR, New York—The prevention of deformities is a question of great interest not only to the surgeon but to the community. Dr. Townsend has presented his case with great clearness, and the point made that many of the congenital deformities were in a sense preventable, is a good one. Those that are easily curable in the early stages are often extremely deformed later if neglected, and surgeons are often confronted with this condition of things. The patients will tell you that they have been advised to postpone treatment until a certain age on the understanding that the patient will outgrow the deformity—and there are cases where this point of view is, in a measure, justified, as, for example, in rickets—but there is seldom any reason for postponing treatment for years and it is poor advice to say that the deformity will be outgrown, unless you are certain that this will be the case. As to the paralytic deformities, only yesterday I had occasion to operate on a case of infantile paralysis in a four-year-old child, the contractions being in front of the hip and behind the knees and ankles, necessitating an extensive operation. Tenotomies of the heel cords and of the ham-string and open dissections to the structures in front of the hip joint had to be done. These deformities are easily preventable. If one-tenth of the attention were devoted to the prevention of deformity in these case of infantile paralysis that is devoted to the employment of electricity, the results would be better. Another class that is often preventable are those deformities which follow fracture, and in two locations this is especially true—for example, in deformities following Potts' fracture of the foot, of which we see scores yearly. If these cases were properly treated by replacement and inversion of the foot in the beginning, they would be prevented. Another class which is not always easy to prevent are the fractures just above the elbow, but careful management on correct principles will usually yield a good result.

Our medical confrères are hopefully striving to limit the speed of tuberculosis, but without waiting for the results of their labors, surgeons may hope by early and exact diagnosis of bone lesions in some instances to remove disease before it becomes dangerous to life or limb through joint involvement. Tubercular disease in or near the great trochanter should be located and removed in many instances before the hip is involved. Brilliant work in this line has recently been done in tuberculosis of the patella, and if attention is directed along this line such opportunities will be increasingly numerous.

As to Dr. Jonas' paper, I think his plan of making a sliding flap to cover a large part of the exposed area is a very good one, but I would limit the deep operation to intractable cases. We can nearly always cure our patients by simpler means, but in the older or in the more severe cases it seems to me he has suggested a very practical means for eliminating the unsightly defect usually left by the Phelps operation, and I thank him for his able presentation and practical suggestions.

DR. H. M. SHERMAN, San Francisco—As to Dr. Jonas' paper, I have to say that the Phelps method is one that I abandoned many years ago, as I failed to get the results I expected. I resorted to subcutaneous work whether it was in soft or hard tissues. The incision Dr. Jonas suggests is exceedingly ingenious, but I think the deep region can be equally well reached by a curved incision with the base downward and convex upward along the side of the foot. You can turn down this flap and do plastic operations on the tendons. It is not the skin that causes the relapse; it is the deeper tissues. Any method which gives free access to them is to be commended.

Dr. Townsend's paper covers an exceedingly wide subject, and unless we were to discuss each individual disease producing a deformity we would miss much. Plainly, it puts another task on the general practitioner, who must know exactly what deformities are likely to occur after each one of the conditions which may confront him. In many such cases a deformity might be prevented, while in others surgery would be required from the very start. This is especially true after burns, for no amount of apparatus will control these deformities. It is wiser, for general reasons, that the general practitioner should have the orthopedist to aid him in all these cases. Dr. Townsend mentioned the contraction that occurred after knee-joint excisions; now sometimes a brace or splint will fail to control them. I have seen these cases go on to producing very bad pressure sores in a primarily well-fitting splint, which absolutely prohibited the flexion. When the splint was changed a little flexion occurred, and as the pressure sores prevented further efficient splinting, the average amount for these cases of flexion resulted. I believe these cases represent a type of secondary deformities of most obstinate character.

DR. A. J. STEELE, St. Louis—I want to say "Amen" to Dr. Jonas' paper. I believe there are very few cases of clubfoot that require interference with the bone, although a certain number of old cases may. Of course, when it is necessary we will have to do it, and I think going through the neck of the astragulus with a chisel is the best way. I have long since given up the Phelps operation. I believe most cases of clubfoot can be cured by subcutaneous surgery, and we should only divide the integument and bones when absolutely necessary. Plaster-of-Paris bandages should be applied to retain the foot in the improved position. Dr. Townsend's remarks are most timely. As our fees come from the cure of these deformities so the average citizen would say you are taking bread out of your own mouth by preventing them, scarcely appreciating our unselfish spirit and act. All that Dr. Townsend has said on the matter is correct. It should be our aim and object to teach the people the facts in the paralytic cases so that deformities may be avoided.

DR. C. E. RUTH, Keokuk, Iowa—This is a subject in which I have been considerably interested for years as these cases have occasionally given me considerable trouble. I have long since abandoned the idea of making a V-shaped resection in severe cases from the outer side of the foot because in many of these cases when the V is extended two-thirds of the way across the foot reposition places the anterior diagonally across the posterior section and the resulting bony contact is not what it should be. The sectioning of the bones even in extreme cases has not in my experience been necessary under four years of age. I have operated on a very difficult case, even at the age of thirty-four, where the soft parts on the inner side of the foot were so short that it would have required a sectioning of everything on the inner side of the foot in order to place the bottom of the foot downward. This case was operated on four years ago, and I secured a good result by the removal of the astragulus. Since then the man has been able to walk, even following the plough or doing any kind of work that he choose without marked inconvenience; there has been no tendency whatever to a relapse. In these cases it is not wise to flatten the foot too much by sectioning the soft parts and thereby abolishing an exaggerated arch. I heartily endorse every word that has been said in reference to the prevention of the deformity. As to sectioning the neck of the astragulus I think it is a very wise precaution in some of the severe cases where the soft parts will permit of replacement. It requires considerable force to retain the parts in a position. I was glad to hear the Doctor say we should use the plaster of paris above the knee and it is wise that when used in that position the flexion should be at least 35 degrees with complete eversion. If we extend the plaster of paris only to the knee there will be a very pronounced in-toeing which is very objectionable. I would like to have heard something about using the tibialis anticus to raise the outer side of the foot by detaching its internal tendinous connections and attaching same to the outer side of the foot.

DR. FRANK WARNER, Columbus, Ohio—Although my experience has been limited, even a few cases should enable one to draw some conclusions. In the correction of these cases of talipes we must do so in such a way that after restoring the foot to a normal position and you let loose of the foot, it will remain practically in that position, or at least require no decided tension to keep it there. Unless you keep the deformity well corrected in putting on your apparatus there is a likelihood of failure. In order to avoid much pressure to keep the foot in position you should make a division of the tissues sufficient to overcome all tension, not minding whether it means the bone as well as the soft parts or not. In relieving the deformity I do not believe it makes a great deal of difference what the character of the incision is. The keynote is to cut enough tissue so that the foot remains in the normal position by slight tension, when the retaining apparatus should be applied; but this apparatus should not be applied until a sufficient division of the tissues has been made so that the apparatus may easily hold the foot in position.

DR. C. E. THOMPSON, Scranton, Pa.—I have treated forty cases of this condition but have never commenced directly at the end of the third stage of labor, although I have begun in a few cases immediately after the baby was washed. The ages of my cases extend from this time up to thirty-five years, but of course this latter class is not the one to be corrected by the hand of the mother or the nurse. I have never done a Phelps operation but have watched very competent men do it sufficiently often to be satisfied that I did not want to practice it. My treatment has been the correction of the deformity by repeated stretchings, subcutaneous tenotomies and fasciotomies and retention in the correct position with plaster of paris casts for a long time. I will have to differ with Dr. Warner when he says that you must have your foot corrected so that it will remain corrected before you put on your appliance. The strongest element that I have ever used in the correction of this deformity is my hand and the patient's weight, together with a plaster of paris cast, so arranged that every step the patient takes aids in the correction of the deformity.

DR. JONAS, in closing—This discussion has been very interesting. It is admitted that the simplest method that will correct a deformity is the one to be employed. If manipulation is sufficient to restore the foot to its normal condition that is all that is necessary. The cases referred to in my paper were old relapsing cases, ones of extreme deformity, such as where the superimposed weight rests on the dorsal surface of the foot, with the plantar surface pointing in and backwards. All who have had experience in this line of work must admit that sometimes extensive operations become necessary and all surgeons will agree that an open operation is preferable to a subcutaneous method. An operation enables one to see exactly what is being done. I believe in the diagonal division of shortened soft structures so far as possible, but in cases where you can make a transverse incision without leaving any dead space between the tendons, one should do so. I have no other comments to make.

THE LEGAL STATUS OF THE TERM "REPUTABLE" AS APPLIED TO DENTAL COLLEGES.*

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Uniformity of dental laws and standards in the various states of this country has been a consummation long sought and most devoutly wished by those men who have followed, as well as those who have dictated and guided, the development of our educational methods, with a view to placing the dental profession of this country where it rightfully belongs before the civilized world.

UNIFICATION DIFFICULT.

The comparative ease with which the legal right to establish and maintain schools and colleges in any state or territory is secured is only exceeded by the great difficulties that have presented in all attempts to unify methods, curricula and standards for the conferring of the dental degree.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. G. V. I. Brown, M. H. Fletcher and R. R. Andrews.

As schools increased in number, the estimated value of the dental diploma became more and more an unknown and uncertain quantity, which condition resulted in an effort toward the establishment by the people, through their legislative representatives, of some legal process of measuring and weighing the character and quality of any man's preparation and fitness, before permitting him to offer his professional services to the public.

Since, for obvious reasons, a national standard could not be secured through Congress, it was left for each state to enact its own police regulations. Through the power of association which has been steadily growing during the past forty years, concerted action in the different states was possible in securing legislative enactment. A general and uniform draft of statute was prepared and recommended to the several states by committees selected for that purpose. But concert of action does not always bring uniformity of outcome.

THE LAW IN VARIOUS STATES.

The result has been a multiplicity and variety of dental laws almost as different in their construction as it is well possible to conceive—viewed superficially. For instance, forty-seven states and territories of this country have enacted dental laws, in all but one of which a board of dental examiners has been created.

In twelve of these states no mention is made of the existence of a dental college. Any and all persons so desiring may be examined as to their fitness (no matter where acquired) to practice, and the board, in its discretion, licenses or rejects them. Eight other states, on the other hand, will admit no one to examination who is not a graduate of a reputable dental college. One state, Wyoming, has no board, but admits no one to practice without registering a diploma from a reputable college. Added to these nine are twenty-six other states which, while admitting all who may so wish to be examined by the board, at the same time direct the board to grant license without examination to those persons possessing a diploma from a dental college which complies with such standards and requirements as the law provides.

It therefore transpires that of the forty-seven enactments in this country for the regulation of the practice of dentistry, thirty-five specifically mention the possession of a diploma from a recognized or reputable dental college as a necessary or at least an important factor in securing a license to practice dentistry.

THE COLLEGE MUST BE "REPUTABLE."

The different state laws make different specific requirements of colleges whose diplomas they accept as a qualification for license, but practically all laws provide that the college, after fulfilling all other specifications, shall, in addition thereto, be "reputable." In each and every case the board of examiners is left without any instruction as to the method of procedure in determining the reputability of a college, or as to the scope and meaning of the word "reputable." It is simply prescribed that the college must be "reputable," thus placing upon the board the judicial duty of establishing criteria of reputability and choosing its own methods of applying them to colleges when called to act officially.

Naturally, when standards have been fixed by a board which conflicted with the interests, financial or otherwise, of a certain school and measured by which that school's diplomas are discredited, a definition of the board's powers and limitations has been sought by the use of mandamus proceedings. And there are several decisions extant on the statute books of different states, all sustaining the position of the boards where there was no question as to the competence and good faith of the examiners.

THE WISCONSIN COURT DECISION.

It remained, however, for the Supreme Court of Wisconsin, in a decision handed down Jan. 7, 1902, in the mandamus suit of W. L. Coffey vs. State Board of Dental Examiners, to so fully define and elucidate the whole question of the board's powers, and of what the statute means by the word "reputable," as to set at rest any further cause or excuse for mandamus proceedings.

The state board had officially refused to accept Coffey's diploma in lieu of examination for license by the adoption of the following resolution:

> Whereas, After due and careful consideration, acting under and pursuant to the provisions of Chapter No. 56 c. of the Wisconsin Statutes, this board has decided that in the opinion and according to the best judgment of the board, "The Department of Dental Surgery, ... College of..... ," is not a reputable dental college; therefore, be it
>
> *Resolved*, That this board does hereby refuse to accept the diplomas of said Department of Dental Surgery, ... College of ......, in lieu of examination for license to practice dentistry in this state.

Under mandamus proceedings in the lower court, all the reasons why the board declared this certain college to be, in its judgment, "not reputable," were brought out on the witness stand. These included—besides proof of certain misrepresentations by members of the faculty, under official questioning by the board as to facts concerning the school and its management—deviation from generally accepted standards in matriculation and transfer of students, in equipment, in curriculum, in methods of and facilities for instruction and training and in several other particulars as to the methods of conducting the school.

The lower court held that the board had erred in some of its proceeding, and declared the school "reputable." The board appealed from this decision to the highest tribunal in the state. The Supreme Court reversed the decision of the lower court and sustained the action of the state board at every point in a most exhaustive opinion reviewing the testimony brought out in the lower court.

SUMMARY OF THE DECISION.

The following is the summing up of the law points by the court:

STATE OF WISCONSIN—IN SUPREME COURT.

State of Wisconsin, Ex. Rel. W. L. Coffey, Respondent.
vs.
C. C. Chittenden et al. Constituting the State Board of Dental Examiners, Appellants.

SYLLABUS.

1. The scope of mandamus proceedings to coerce a person or board to the performance of a judicial or quasi-judicial duty extends only to compelling such person or board to act, not to directing him or it how to act, unless the underlying facts are undisputed, leaving no reasonable ground for action other than one way.

2. If a person or board is clothed with judicial or quasi-judicial power in the determination of questions of fact and the taking of some specific action upon such determination, and fails to make a proper investigation of such questions, it is not within the function of a mandamus proceeding, predicated on such neglect, for the court to assume and exercise the duty of such person or board and make such investigation.

3. The character of a dental college or other institution of learning at a particular time may be established by evidence of its character at a prior time not so remote but that it would be reasonable to assume that the prior condition still exists. The rule applies that "when the existence of a person, a personal relation, or a state of things, is once established by proof, the law presumes that the person, relation, or state of things continues to exist as before, until the contrary is shown, or until a different presumption is raised, from the nature of the subject in question."

4. The character of a dental college in April of one year is *evidentiary* of its character in May of the next year, and may have sufficient probative force in that regard to reasonably establish such later character.

5. The word "reputable," as applied to dental colleges in the law authorizing the State Board of Dental Examiners to license persons to practice the profession of dentistry, without examination, who have graduated at such a college having certain specified requisites means *reputable* in the general sense in which the term is ordinarily used: Worthy of repute or distinction, held in esteem, honorable, praiseworthy.

6. In passing upon the application of a graduate of a dental college for a license to practice his profession in this state, the Board of Dental Examiners must determine whether his diploma comes from a reputable source as an independent fact, considering the term "reputable" in its ordinary sense and measuring the character of the college from the standpoint of men competent to judge thereof by reason of their scientific attainments in the line of work for which such a college stands.

7. The State Board of Dental Examiners, *proceeding reasonably*, is the sole tribunal under the statutes to determine the questions of fact to be solved, precedent to the licensing of a person to practice the profession of dentistry in this state.

8. When a graduate of a dental college applies to the State Board of Dental Examiners for a license to practice his profession, the burden of proof is upon him to establish the reputability of such college.

9. The State Board of Dental Examiners, having once determined the character of a dental college, may properly consider all questions in regard thereto at rest till, by lapse of time or otherwise, some reasonable ground exists for believing that its character may probably have changed.

10. The State Board of Dental Examiners having once determined the character of a dental college, within all reasonable limits, when and under what circumstances the subject shall be re-examined rests solely in its discretion.

11. Since the law does not define the method by which the State Board of Dental Examiners shall proceed to determine the reputability of a dental college when that is material to its official action, such board may perform its duty in that regard in any reasonable way it may deem proper, and candidates for licenses to practice the profession of dentistry must submit to its judgment so long as they are within the boundaries of reason and common sense.

(Syllabus by Marshall, J.)

THE DEFINITION OF "REPUTABLE."

Beyond a peradventure the foregoing syllabus definitely settles several things heretofore misunderstood or left in doubt.

First. The intention and meaning of the word "reputable" as applied to dental colleges is "Worthy of repute or distinction, held in esteem, honorable, praiseworthy."

Second. The question of reputability of a college as an independent fact is left to the decision of "men competent to judge thereof by reason of their scientific attainments in the line of work for which such a college stands."

Third. The state board, proceeding reasonably, is the sole tribunal under the statutes to determine the questions of fact to be solved.

Fourth. The burden of proof is upon the graduate to establish the reputability of his college.

Fifth. The state board, having once determined the character of a dental college, within all reasonable limits, when and under what circumstances the subject shall be re-examined rests solely in its discretion.

Sixth. The board may perform its official duty of determining the reputability of a dental college, in any reasonable way it may deem proper, and candidates for licenses to practice the profession of dentistry must submit to its judgment so long as they are "within the boundaries of reason and common sense."

The deduction of your essayist from all this is, that the question of unification of dental laws and interstate reciprocity of license, together with unification of dental educational standards on any reasonably high plane "within the bounds of common sense," is in the hands and entirely within the province and power of the state boards, provided they will act in concert in carrying out the high duties imposed upon them as the dental police officers of their several states, and this, too, without the enactment of any new dental legislation whatever.

The N. A. D. E. and the N. A. D. F. have enacted and adopted rules and educational standards that are acceptable to the profession at large, and have arrived at what general standards should be fixed as the criterion of reputability, but in order to make these "reasonable" standards nationally uniform it will be imperative that each and every state board in the union adapt them to its uses under its state laws and adopt them as its own standard of reputability.

Surely a standard built on such a broad foundation must be considered as coming "within the boundaries of reason and common sense," and therefore may be applied freely in judging the value of diplomas of any applicant for license in any state.

JUDICIAL POWER OF THE BOARDS.

In the twelve states first mentioned where the law compels the examination of everybody and does not make any mention of a diploma (taking the state of Massachusetts as an example), the character and scope of the examination is left absolutely to the discretion and judgment of the board—therefore it is entirely competent for that board to make the possession of a diploma from a "reputable" college as prominent a factor in the examination of a postulant for license as they may deem wise—and thus enables the boards of these twelve states to have as much to say as to what constitutes a reputable dental college as those of the remaining thirty-five states and territories where statutes do give a specified value to the diploma of a reputable college.

So it will be seen that the statute in every state in the union grants its state board all the judicial power necessary to join in the establishing of absolute national standards of dental educational requirements.

There is absolutely nothing in all this proposed unification of standards, etc., by the boards that can react in any but a beneficial manner upon the schools themselves. The element of commercial competition will be eliminated where it exists, and in its stead the spirit of emulation will be greatly stimulated.

THE OUTLOOK FOR DENTAL EDUCATION.

The improvement and advancement in the general character of the dental college course in the past very few years is a fact which gives great promise for the future of dental education in this country.

Few can know and appreciate at how great an expense of energy, time and strength, and with what sacrifice of self and the comforts of life the honest dental teacher carries on his labor of love. Many of our brightest and best men have shattered their health and shortened or sacrificed their lives for the advancement and dissemination of knowledge in our colleges—and in almost no instance has the pecuniary return been in any sense adequate to the sacrifices made, and still the signs of the times indicate that the end is not yet.

The schools are building themselves on broader educational foundations, fitted to support a more elaborate and symmetrical superstructure, whose power and beauty shall command the respect and admiration of the civilized world—as well as set the pace for all Christendom.

School men have at last come to understand that the examiners, with the law at their backs, are a tower of strength in support of all honest educational efforts, as well as a menace to all forms of pretense and sham.

The only way in which this country can establish and maintain its supremacy in dental educational standards over the rest of the world, is by a concerted national legal standard being made by the legal guardians on whom the sacred trust is imposed—and these guardians must deserve and command the confidence and co-operation of the colleges, as well as the profession at large.

The question confronting us to-day is simply whether we as a profession will arise and enter into our birthright.

DISCUSSION.

DR. G. V. I. BROWN, Milwaukee—It is important for us to know that this is the first time that we have been able to take up the discussion of dental legislation with reference to the curriculum of advanced dental education and bring forward such changes as we desire to have made for the elevation of the profession with a certainty that we could carry them out. The term "reputable" as applied to colleges is now defined to mean having a standard which is in accordance with that of the best other similar institutions. This, also, might be extended to imply that a proper curriculum is one in accordance with what is laid down as right and sufficient by those best versed in the educational needs of dental colleges. It seems to me at this time like the opening of a wide vista before us as we contemplate the work to be done, and more especially with regard to the distinct line of progress in which this Section has been interested in for so many years. We can now take up intelligently the consideration of such branches as should be taught, how much and how little of each which are best adapted to the need of a dentist from the standpoint of the artisan purely, and which are more fitted to enable him to rank among the professional men of the world as this Section would have him, taking his rightful place in the rank of medical practitioners without sacrifice of manipulative dexterity. It seems to me that it is a very beautiful tribute we are called upon to receive and acknowledge, this crowning of the labors of Dr. Chittenden and of the other gentlemen who have carried on the work of the Section with high ideals, and to know that these aims are in a fair way to be consummated, to be made to feel, as all must whose hearts are tuned to vibrate in unison with thoughts that lead upward toward professional advancement, with its ultimate aim a beneficial service to humanity, that the members of that august body, the Supreme Court of the State of Wisconsin, are in sympathy with our work, and have taken notice of the self-sacrificing life-work of our confrère, Dr. Chittenden, by making clear the legal complications that for so many years have been our stumbling blocks. Even beyond the apparent necessities of the case in controversy has the legal status of boards of examiners in relation to courts of law and dental colleges been defined. A ruling has been handed down that will govern boards of medical, legal and other examiners as well as dental for years to come.

DR. M. L. RHEIN, New York City—I feel that all of the profession are indebted to Dr. Chittenden for the work of bringing this matter to such a magnificent consummation in his own state. In the East we have read with interest the controversies in the matter, but we felt that our interests were in very good hands. This magnificent decision is unquestionably a tribute to the esteem in which Dr. Chittenden must be held personally in the state of Wisconsin.

One of the things we have been striving for in our state is to get a unity of understanding so that the bearer of a license to practice in one state could practice in another. We hope that the present reciprocity between some states of the right to practice may be extended to other states. It is an unwarranted hardship to ask a man who has been practicing for some years to pass the ordinary examination. However, it would be folly for us to take into some of our states practitioners with the endorsement of some of the boards of examiners.

DR. A. E. BALDWIN, Chicago—I am glad that Dr. Chittenden has been able to present this paper to us and to the profession at large through THE JOURNAL of the American Medical Association, because it is a move in the direction of higher standards, higher education and broader qualifications. To my mind it marks an epoch which will be more readily recognized in the future. It seems to me that this so-called reciprocity in professional work should obtain. It is in every way reasonable and equitable, and once established, I believe it will do more for the elevation of dentistry than any other one thing. I feel that I can endorse very heartily the tribute of Dr. Brown to Dr. Chittenden. For fear of it being misunderstood by the readers of this paper, I want to say that I do not think this decision of the Supreme Court of Wisconsin was qualified in any way by the personal opinion of the Supreme Court judge for Dr. Chittenden. I do not think that was the meaning of Dr. Rhein. The decision of the court will be even more far-reaching than is perhaps now realized.

DR. RHEIN—I trust that my remarks did not bear the interpretation suggested by Dr. Baldwin. I meant that the record of our specialty coming through such a man as Dr. Chittenden proved that we are in a position to receive such a decision.

I would like to say, in regard to the troubles in Germany last year, and which were taken up by our consul, that in returning last summer from Germany one of our passengers was Professor Andrew D. White, our ambassador to Germany. It was a matter to me of great pleasure to see the interest taken in our specialty by Professor White, and desiring to send a message to those interested in this work in America, he said he wanted us to know that in anything in the nature of international complications he placed himself at our disposal, and wanted us to feel that we could have access to him at any time in reference to such matters as had come up last year.

DR. E. S. TALBOT, Chicago—If the state boards adopt the law as explained by Dr. Chittenden they have an immense power to wield in regard to dental colleges. The word "reputable," and in another clause "the burden of proof placed upon the graduate as to the reputability of the college" covers the ground. It relieves the state boards of much hard work and at the same time gives them the ability to maintain high standards. In taking this position the judge seemed to have an insight into the conditions and affairs and to have made it plain that any state board with the least amount of ability could place their board in a position to command the respect of all the colleges in the country.

DR. BROWN—As a matter of fact, reciprocity is a possibility and can easily be an actual fact. I do not suppose any of you will remember the Chairman's Address which I read at Columbus, but at that time I outlined the possibility of an arrangement whereby all individual boards could be guided and supervised by the National body and made the statement that though individual members of boards might in some instances prove to be mercenary and ignorant, and have secured their positions as a result of political appointment, a selected committee from the best representatives of all of the boards of the United States would be as nearly fair and honorable a tribunal as would be possible to secure. The board of Wisconsin has made all that possible. Under the direction of their attorney this board has prepared its own rules. Instead of being guided by the National body it has adopted for its governance certain rules and regulations, based on the rules of the associations. Under the decision of the Supreme Court its members can require just exactly whatever the rule demands and thus, as they see fit, can raise the standard. The board is a judicial body and in the reasonable exercise of its proper powers can not be overruled by any court of law. If the different boards choose to adopt similar rules and regulations under these conditions the standard will be at once uniform and it will then be possible for reputable graduate licentiate practitioners to go from one state to another without being harassed by examinations, as they should be allowed to do. On the other hand, a safeguard is provided that takes away the possibility of having too loose or haphazard methods.

A part of our work for the future should be to prepare a way for the proper education of the dental student, for a wider medical education as a prerequisite for his full recognition as a reputable dental practitioner.

DR. J. L. WILLIAMS, Boston—If we can get good men on the state examining boards there will be no difficulty, but in some states the boards are ruled by politics. I think it is quite proper that the examining boards should have the legal power if they are well qualified and honest men.

DR. A. H. PECK, Chicago—The subject has been so entirely covered that I will simply say this, because I am anxious to go on record before the dental world and before the medical world as one who is in favor of everything which tends to uplift our profession. This has been my sentiment for years, and I am exceedingly glad that we have one man who has been on a state board of dental examiners for years, who has given the best part of his energy to the consummation of some plan as a standard for the future. Dr. Chittenden is the man, and he has given us to-day a careful résumé of the laws of the various states and their attitude toward dentistry. It is for us to say whether a school is reputable or not. I hope, further, that the power may be placed with them of determining the value or the reputability of a diploma given to a graduate by any institution. Men and women are turned out of our institutions with their diplomas who are not capable or should not come before the world as graduates of any reputable institution. So long as I hold a guiding hand in the affairs of an institution my efforts shall be in this direction: to uphold every effort of the state boards throughout the country looking to the elevation of the standard of dentistry.

DR. G. F. EAMES, Boston—I heartily endorse the statements so far as I have heard them, especially the remarks of the Chairman, and so far as I have looked over the paper. There is a great deal to be done with the state boards themselves, in my opinion, for certainly their methods of examination and questions that they have proposed, whenever they could be ascertained, have been far below what I should term a reputable standard.

Any further word that I might say would simply, if possible, make emphatic the suggestion of the unification of these laws and standards. When the standards of examiners in all the different states, or any number of states, are of the same degree, and of a satisfactory grade, then, it seems to me, it would be a very easy matter to enact laws by which a practitioner, having passed successfully one state board, may be admitted to practice in any state having an equivalent standard of examination.

DR. BALDWIN—If it would be in order, it seems to me it would be proper for a resolution of recommendation to go from this Section to the National Board of Dental Examiners requesting in the name of the Section on Stomatology of the American Medical Association that they look with favor on this interpretation given by the Wisconsin Supreme Court.

DR. CHITTENDEN, in closing—The difficulty in the past has been that the boards of examiners were antagonized by the schools and there was a spirit of commercialism in the faculties themselves and it was only after a serious struggle that it was possible for the examiners to get the colleges themselves to set a definite educational requirement for admission to their schools. From that point we have gone forward and the years intervening have brought the two institutions more closely together. Last year the faculties' associations recognized that the examining boards were really becoming their friends. The suggestions which I have endeavored to show you are absolutely feasible for the establishment of a National educational standard which may set the pace for the world. It is understood and known that the law of New York State is the best and the one requiring the highest standard in the United States. It has seemed to most men interested in dental matters to be a standard sufficiently high to be sought and chosen as a criterion to which all boards should come. The matter must necessarily move slowly. The boards are scattered throughout all the states of the Union and it is difficult to get them to coöperate. Once the colleges encourage what I have undertaken to describe, the boards will understand that it is a desirable thing. As soon as the educational standard was permanently established in 1899 commercialism practically ceased. With the standard as it is, no school can matriculate a man unless he can present credentials acceptable to the state superintendent of public instruction.

I can see no question, Mr. Chairman, that the propositions made in the paper are not absolutely feasible; that they may not be put into action and in that way enable us to set a standard of dental education for the world.

DR. BALDWIN offered the following resolution:

Resolved, That the Section on Stomatology of the American Medical Association heartily endorses the decision of the Wisconsin Supreme Court as to the judicial powers of the state board as to the determination of what constitutes "reputability"; and we heartily recommend this decision to the National Association of Dental Examiners as a basis for establishing professional reciprocity in our grand country.

On motion the resolution was adopted.

THE SYMMETRY OF OUR VISUAL APPARATUS AS A DUAL ORGAN.

A PLEA TO MODIFY THE CUSTOMARY NOTATION OF THE OCULAR MERIDIANS.[*]

HERMAN KNAPP, M.D.

NEW YORK CITY.

Our visual apparatus is a dual (paired) organ, symmetrically placed on both sides of the median plane of the body. In the skull the dual parts coalesce at two places, the chiasm and the quadrigeminal bodies which are cut by the median plane, whereas in all other places the dual parts are so arranged that each of their points on one side has a corresponding point at equal distance on the other, as if one side were a reflex image of the other, cast by a plain mirror substituting the median plane of the body.

Outside the skull, all the remaining parts, orbits and their contents, as well as the eyeballs with all their intricate structures, follow the same rule; each point has its correspondent at the same distance on the other side of the median plane of the head.

My purpose, at this place, is to consider only one part of our visual organ with regard to the law of symmetry, the refractive apparatus. A complete analysis of the final refractive effect would require the determination of the curvature of the anterior surface of the cornea, the curvature and position of the surfaces, as well as the coëfficient of refraction of the lens, and lastly, the inclination of the cornea and lens toward the optical axis of the eye, i. e., the centration of the refractive system.

It is well known that the anterior surface of the cornea has a greater influence on the refractive effect than all the rest of the system together.

The cornea—meaning its anterior surface—is not a part of a regular geometric body, but what mathematicians call a skew surface (*surface gauche, windschiefe Fläche*), in which the meridians differ from one another. causing a visual imperfection, the correction of which is one of the chief objects of the oculist's practice—astigmatism. The ingenious modification of Helmholtz's ophthalmometer by Javal and Schiœtz is accurate enough to determine the existence and degree of astigmatism as well as the direction of the principal meridians of the cornea, but falls short to determine the astigmatism of the whole eye, which not infrequently is influenced appreciably by the system of the crystalline lens. The determination of the astigmatism of the whole eye is satisfactorily done objectively with the ophthalmoscope by the direct method and the shadow test. The final test, however, always consists in the best correction of the vision with glasses. In this way the refractive condition can be determined with great accuracy. By these examinations which every oculist has to make daily, it has come out that the principal meridians may be found in any position, yet with varying frequency.

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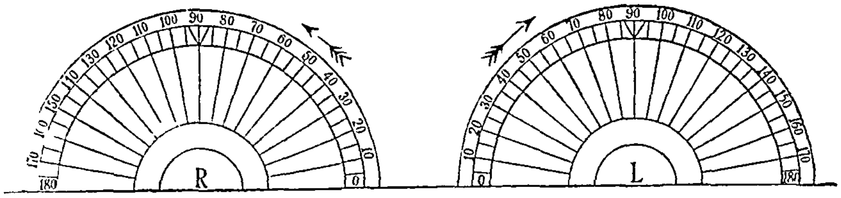
[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

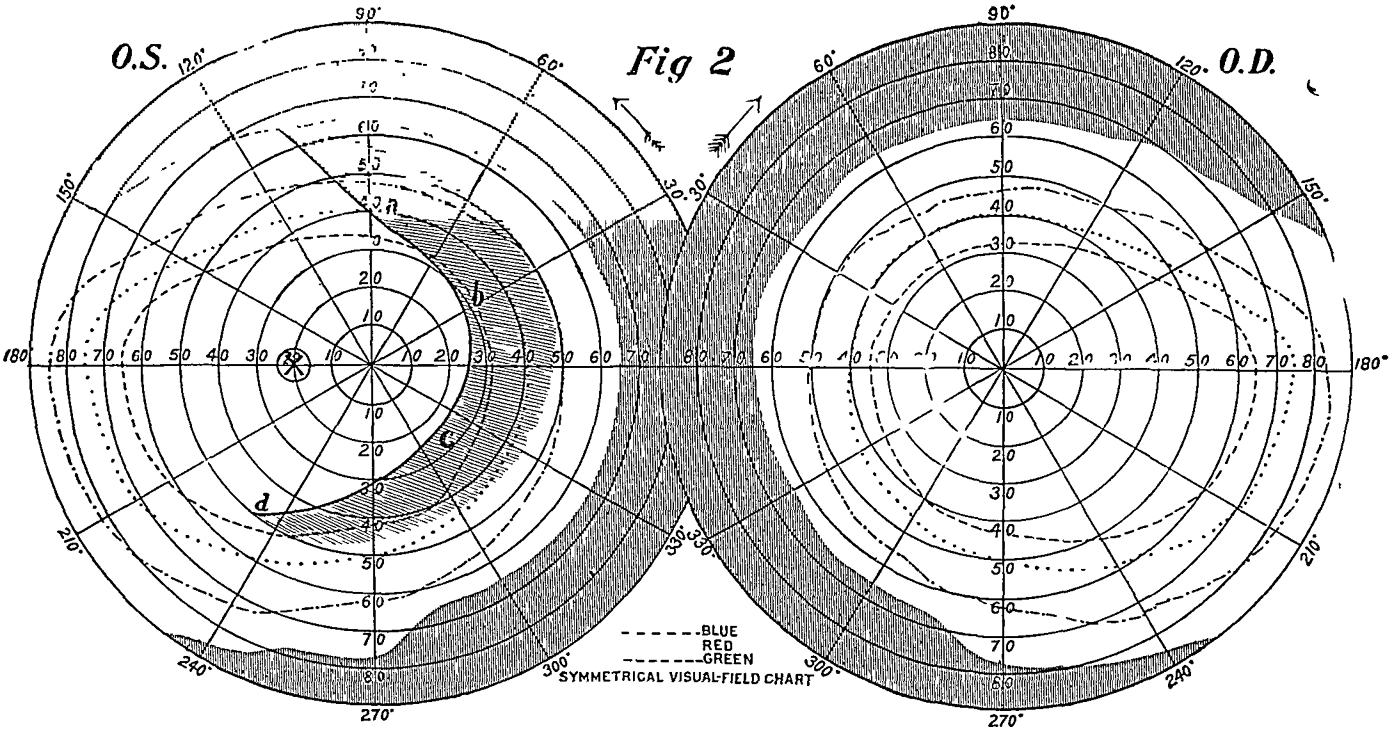
The writer published in the Transactions of the American Ophthalmological Society[*] 1,000 cases of astigmatism with regard to the position of the meridians, and in the Transactions of the Ninth International Ophthalmological Congress at Utrecht[†] 1,473 cases more, the statistics of which were: 1, in 78 per cent. the meridians were symmetrically placed, in 22 per cent., asymmetrically; 2, the vertical meridian had the strongest curve in 56.5 per cent.; next in frequency came the horizontal, with 10.3 per cent.; 3, in the intermediary positions the strongest meridian inclined to the nasal side about twice as often as to the temple. Similar observations being in accord with these statements, and being well known, we need not go into further details.

Now, which will be the best mode of recording the results of our examinations of astigmatic eyes? Snellen and other leading oculists use and recommend to take the vertical median plane of each eye as the basis from which to proceed, because it is parallel to the median plane of the body. Starting from the upper end of the vertical meridian, counting on both sides from zero down to the horizontal meridian, they call the degrees on the medial side plus, those on the lateral minus. I have used this system long, and proposed its adoption at the Seventh International Ophthalmological Congress at Heidelberg in the year 1888, and at the American Ophthalmological Society in 1892, only replacing the plus and minus signs by the indices n (nasal) and t (temporal), which Snellen (see preface to the last edition of his test-types, 1902) is willing to substitute for the plus and minus signs that require an explanation and readily lead to clerical errors.



SYMMETRICAL ASTIGMATISM CHART
PUBLISHED BY GALL & LEMBKE, NEW YORK
Figure 1.

Fig 2



PUBLISHED BY GALL & LEMBKE, NEW YORK.

O. S. Blind spot me 180, pa 20. Glaucoma a = me 90, pa 40, b = me 30, pa 29; c = me 325, pa 23; d = me 236, pa 50.

O. D. Green-field me 0, pa 35; me 60, pa 32; me 120, pa 37; me 170, pa 60, me 180, pa 64; me 210, pa 60; me 242, pa 50; me 300, pa 40.

At the Seventh International Ophthalmological Congress at Heidelberg in 1888 I recommended a second system of notation of the meridians and the field of vision as equally suitable, namely, to begin at the nasal end of both horizontal meridians, mark them 0°, and count upward and all around the circle until we return to 360°, coinciding with the starting point 0°. I said:* "If this system should be chosen I would accept it with pleasure. It is expedient, perspicuous, plain and precise. Clerical mistakes between + or n and — or t would not occur."

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[*] Meeting of 1892, vol. vi, p. 308

[†] Page 65.

At the last International Ophthalmological Congress† I brought up this subject again in one of the general sessions with a view to establish a uniform designation of the meridians of the eye and the field of vision as well. I no longer advocated the vertical meridian as the basis, but recommended the second system, which I had declared as equally suitable at the Heidelberg congress, and which departs only slightly from the system most common in America, is in perfect harmony with the principle of symmetry, and our diagrams will read the same whether looked at from in front or from behind.

The American method has the disadvantage that it disregards the symmetry in the position of the meridians; for instance, of the temporal diagonal meridians the left is marked 45 degrees, the right 135. If we begin the count on the nasal end of each horizontal meridian both would be marked 135, as they should be, being identical.

In the system which I propose we have just as rational and convenient *a chart for the visual field* as for the meridians. The chart contains meridial and parallel circles all around. Any point, any defect of F., can be clearly designated by two numbers, that of the meridian and that of the degree of latitude, just as the mariner designates the position of his ship by the longitude and latitude on his charts. This can be put into the text of a written or printed report as well as the formulas for astigmatic spectacle glasses. Anyone that wants to map it out need only transfer to the chart the points of outline of the defect found by the examination. In our daily practice a cursory examination of the visual field is as indispensable as that of the acuteness of sight. Locating the blind spot gives us an angle of 20 degrees from the visual line as a basis for the diagram in our case book. Whenever a more accurate determination is important, the perimeter and the chart book are always at hand. The points in the upper half of the field of vision are designated by the crossing of points of the meridians from 0 to 180 and the respective parallels, the points in the lower half by the meridians from 180 to 360, i. e., 0 and the respective parallels; for instance, the blind spot X is located at me 180°, pa 20°. If we abridge meridian into *me*, and degree of latitude into *pa*, we can easily mark down the outlines of any line or figure in the visual field. See the notation at figure 2. In noting the crossing points the letters *me* and *pa* may also be omitted, it being understood that the first number of each pair of degrees always refers to the meridian, the second to the parallel; for instance, 190°, 30° = me 190°, pa 30°, means the crossing point of the 190th meridian with the 30th parallel.

As far as I have given this subject thought and action, the proposition which I made as my second choice at Heidelberg, as my first choice at Utrecht, and, in a more elaborate shape now make before you, gentlemen, is, to my mind, the best among the many that have been tried. It rests on a scientific basis, is of easy application and meets the requirements of our daily practice as well as—personally, I should say better than—any other. Will it have a sufficient advantage over the one that has been in use in America almost generally for so many years? I think it will. I hold myself partially responsible for the customary—call it the American—system. Shortly after I had made this country my home (in October, 1868) the late Dr. Henry D. Noyes of New York came to me with the question: "What manner of designating the meridians would you consider the best for us to adopt?" I told him the one which physicists generally use and Helmholtz has followed in the chapter on the movements of the eyes in his "Physiological Optics," viz.: "Start from your left side and proceed to your right as the hands of the clock." Dr. Noyes asked no more. I find he had described this system at the Fifth Annual Meeting of the American Ophthalmologic Society, July 21, 1868.[1] From that time the method began to spread in this country.

The American method is best adapted for problems of motility where the requirements of single vision demand harmony in our motions as if the two eyes were blended into one. The problem before us, however, is merely optical, its solution rests on immutable anatomic conditions in the investigation and appreciation of which the symmetrical position of the meridians is the controlling principle.

The change from the old system into the new would be simple. 1. It will require a new plate on the spectacle frame for the left eye, placing zero on the nasal and 180 degrees on the temporal side. 2. A diagram of the prescription with the same change for the optician marked: symmetrical notation, to distinguish it from the customary notation, which may be called homonymous. 3. Perimeter charts marked symmetrically, i. e., zero at the nasal end of both horizontal meridians. Counting the meridians from the inner canthus up, along the brow, temple and cheek to 360 degrees or zero at the inner canthus. When these changes are made there will be no confusion and we shall be accustomed to the new system in less than a week.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia—I am not unmindful of Dr Knapp's courtesy in requesting me to open the discussion I am impressed by this all the more by the fact that on a former occasion I was not convinced of the greater value of the methods he has advocated than the one in general use in this country and felt it my duty at that time to oppose the adoption of the first plan now again suggested in this able paper. It was then a cause for profound regret that I could not agree with the conclusions reached by one whose life has been one of singular and untiring devotion to scientific medicine and whose labors have in such preëminent degree enriched our knowledge and proved a constant source of instruction in the art of ophthalmic surgery. After a careful reading of the paper, which with great kindness was placed in my hands for study, I am still unable to see any sufficient reason to abandon the methods employed for the past thirty years, and confuse the records which have been made by the adoption of a new, unless an unquestionably better and more scientific method.

In 1893 this subject was brought before the Ophthalmic Section of the College of Physicians of Philadelphia in a paper presented by Dr. George C. Harlan, in which the many attempts which had been made to reach uniformity were set forth. The resulting discussion revealed much diversity of opinion and resulted in the appointment of a committee consisting of Dr. George C. Harlan, Dr. William Thomson and myself. Drs. Thomson and Harlan reported in favor of a plan similar to the second one suggested by Dr. Knapp, viz., that zero should be at the nasal end of the horizontal meridian of each eye. I then felt it incumbent upon me to urge the retention of our present method and set forth my reasons in a minority report, which I now present, since it still expresses my views.

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* See Bericht 7. Internat. ophthal. Congresses, p. 428, Wiesbaden, 1888.

† The Ninth, at Utrecht, 1899.

[1] See Transactions Am. Ophthalmological Society, vol. I, Fifth Annual Meeting, "Observations on Astigmatism," p. 29.

Before abandoning the method with which we are familiar, and which is in almost universal use in this country, we should carefully consider its advantages and scrutinize the objections that have been urged against it. In the first place, it is not only the established and well-understood method in this country, but is based on principles with which we have been familiar since our earliest school days, and is intimately embodied in the work and records of all scientific investigation, where the circle is a rudimentary factor in the process employed. In our first introduction to mathematical studies we found on the protractor the left hand end of the horizontal line designated as zero and the degrees of linear development on the arc of the circle counted upward by right ascension after the manner of the astronomer. The same method has been from the earliest times employed in graduating the quadrant, sextant, and the meridians as employed by the geographer and astronomer, and more recently on the perimeter and the ophthalmometer. In a word, in all the sciences where the circle is introduced the eastern, or left hand end of the horizontal line has been adopted as the starting-point and the degrees counted upward by right ascension to the zenith. This method is indissolubly joined to the records of the mathematical sciences, and is readily understood by all. When direction is given to place the axis of a cylinder at, e. g., 30 degrees, no reference being had to spectacles, there is not an optician in the world who would not place it as desired, since it would be plainly indicated on the protractor. No one outside the realm of ophthalmology would ever think of getting behind the protractor, and thus reversing the angle. We should, therefore, hesitate before we divorce our ophthalmological records from a method employed universally among scientific men laboring in other fields.

If we adopt the median line of the face as zero, we not only separate ourselves from this universally understood method of estimating and noting degrees upon a circle, but it will be necessary to keep in mind a right and left ascension and we can never be sure that it will be understood without explanation, except by the initiated. In my judgment this will introduce complexity. In place of conceiving under all circumstances a development upon the circle from left to right, we shall be compelled to conceive a development from right to left for the patient's right eye, and left to right for the left eye.

The real cause of confusion, if any, in the system we now employ, is in referring the angles of deviation to the respective eyes of the patient, whereas it should, as in other things, be compared to the horizon line. Personally, I have not found difficulty in doing this, i. e., in viewing the angle from the standpoint of my patient. This presents no more difficulty than in differentiating between the patient's right and left eye, examining them from the front as we usually do, the right eye being opposed to our left. This process of orientation is one we must perform in many details of life. With regard to the symmetrical placing of the meridians in the two eyes, etc., I can see no practical advantage in referring them to the median line of the face, that does not obtain equally for the universal horizontal line.

As regards symmetry and asymmetry of the corneal meridians in astigmatism, our present system has an advantage in another respect. It will be found that in all symmetrically arranged meridians the total for the two eyes will be 180 degrees, e. g., both axes at 90 degrees equals 180 degrees. Each incline from the vertical 15 degrees would place the axis of the correcting cylinder at 105 degrees in one eye and 75 degrees in the other, equal 180 degrees, at 45 degrees and 135 degrees, equal 180 degrees, etc. In any case where their sum is not 180 degrees we have asymmetrical meridians.

Dr. Edward Jackson, Denver—The symmetry of the principal meridians of astigmatism is so constant that I can not conceive of any one working practically at the refraction of the eye without very quickly learning some way of immediately determining whether meridians are symmetrical or asymmetrical. To one, as I understand Dr. Knapp has done, who uses the system of notation in which symmetry is recognized by identity of numbering, it may not at once occur that it can be recognized without identity of numbering, in such a way as Dr. Risley has just referred to, e. g., by simply associating in the mind 105 and 75 degrees, or 45 and 135 degrees, etc.; as every one must have done who works with the so-called American system. Most of us, I think, are not conscious of any obstacle in this; and those of us who have learned to use the American system would for a long time find the change a greater obstacle. So much for the designation of the meridians of astigmatism. The Doctor has also touched upon the designation of the field of vision and of the ocular muscles. We must have same system of notation for both of these purposes and the ordinary system seems almost essential for designating the movements of the eye. Its advantages are very obvious. For designating the field of vision there occur to me certain advantages in the American method worth alluding to. The visual apparatus exhibits throughout a bilateral symmetry. But at the chiasm the significance of the symmetry changes; and that change is important with reference to the designation of the field of vision. Lesions behind the chiasm causing homonomous hemianopsia give rise to the large majority of defects which involve the fields of vision for both eyes, and requiring some comparison the one with the other. Now the two fields as charted in a case of homonomous defect do appear exactly similar in shape. Yet, if we compare it by meridians, the extent of the field, say at 15 degrees for the right and left fields, any defect has precisely the same significance for the two eyes. For homonomous hemianopsia we have an advantage in the present system. Then, in making any change of this kind it is important to consider the methods used in other branches of science. Dr. Risley has alluded to the universal use of our "American" system in other branches of scientific work. But if we go beyond that and consider the value of certain other very arbitrary systems we are struck by their universal use. Take the ten digits, for example; few things could be more arbitrary, and yet see how they are used. If there is anything more widely used than that, it is our still more arbitrary alphabet. The general tendency is to get some one basis and use it in many departments of life; and with us it seems to me that we will do best to continue using a system adapted to other departments of science as well as our own.

Dr. Swan M. Burnett, Washington—At the outset I am compelled to withhold my acceptance of the thesis advanced by my honored master in ophthalmology, Prof. Knapp, that the visual apparatus in man is a dual organ, in the same sense that the hands are, for instance. On the contrary, in my opinion both the anatomic structure and the physiologic function of the apparatus point to the necessity of its being considered as a single, or cyclopean eye. The right side of the brain presides over the right half of this eye—the right side of both globes—and the left side of the brain presides over the left half of this eye—the left side of both globes. Moreover, in consonance with this, the synchronous action of the external muscles of the two eyes with their appropriate centers of coördination, move these corresponding halves simultaneously in a manner necessary for maintaining this relation. Whenever they are not moved in this manner, together, we have well-recognized pathologic states. Single vision with the two eyes is possible only by this association of the corresponding halves of the two globes as a physiologic unit. The objective aim in the treatment of a very large number of cases is to maintain the physiologic identity of the corresponding halves of the two globes made essential by the existence of the cyclopean eye.

We must, then, consider the visual apparatus from a physiologic point of view, as one eye with a right and left side. In pathologic states, as shown in affections of the visual field due to lesions behind the chiasm, the same law holds—a lesion on the right side affecting only the right side of the two eyes, one on the left side affecting only the left half of the two eyes. The symmetry of the visual apparatus, therefore, does not consist in the relations, nasal and temporal, of each globe separately to a vertical plane, but in the relations of this single eye to a single plane—the horizontal. In other words, the cyclopean eye has no nasal or temporal side, but only a right and a left side. In such a badly-constructed piece of mechanism as the human body, where asymmetry in a greater or less degree may be considered the rule rather than the exception, it could hardly be expected that the refracting media of the visual apparatus should wholly escape, especially as it involves two separate and distinct structures, the cornea and lens. The special kind of asymmetry with which we have now to deal is astigmatism. There is one well-recognized form of this, so common as to be considered almost a normal condition, and has for this reason been designated "according to the rule." Here the vertical meridian is more strongly refracting than the horizontal. The reverse of this, with the horizontal meridian more strongly refracting, is next in order of frequency. Both, however, conform strictly to the demands of the cyclopean eye. All other irregularities in the position of the principal meridians conform to no general law, and we must from a scientific standpoint consider them as aberrant.

In order to determine how far this law holds good in actual application, I examined two series of cases of astigmatism, of a hundred each, taken in succession, but at different periods as to dates, from my case-books. In these the percentages were quite closely the same for the two series, that is, in about 50 per cent. the two meridians were horizontal and vertical, "according to the rule"; in 15 per cent. the relation was the reverse of this, sometimes called "contrary to the rule"; about 5 per cent. had an astigmatism with the rule in one eye and inversely in the other; and, in about 30 per cent. the meridians were oblique in one or both eyes. Of the cases with oblique meridians in both eyes, there were in the first hundred, 9 with the axes nasal or temporal in both eyes, but of these only 2 had exactly the same degree of deviation from the vertical; in the second hundred, 14 were nasal or temporal in both, with only 3 of the same degree in each eye. On the other hand, in the first hundred there were 2 with both axes inclined either to the right or left, and in the second hundred there were 5 so inclined. Of the remaining there were in the first hundred 18 with an oblique axis in one eye only, and in the second hundred 11 were so situated.

If these statistics are to be taken as any indication, and I regard them as fairly representative, we must regard as the normal asymmetry of the visual apparatus, one in which the two principal meridians are horizontal and vertical, this being the condition as found in about 70 per cent. of the cases of astigmatism. This also conforms fully to the requirements of the cyclopean eye. In the remaining 30 per cent. there seems to be no deviation of such regularity and frequency to establish it as a law. It is true that in 9 and 14 cases, respectively, in the two hundreds the axes were inclined in each of the two eyes to the nasal or temporal side, but in only 2 and 3 cases to the same degree, while they were inclined to the same side, right or left, in both eyes, in 3 and 5 cases. In the larger number of cases, that is, 18 and 11, in the two hundreds, there was an oblique axis in one eye only. If there were a law of symmetry of obliquity we should expect, if there were an inclination of the axis in one eye, to find a corresponding inclination in the other. I can not, therefore, consider it justifiable, or strictly scientific, to take any single aberration from what appears to be the physiological state as a basis for the establishment of a law and for the inauguration of a new system of notation. The two systems of this kind which have been advocated are: first, the adoption of the vertical meridian as a point of departure, and counting to the nasal and temporal sides of each eye to 90 on the horizontal. This I consider not only unscientific, since it is out of keeping with any manner of notation of degrees employed in scientific work, and not in harmony with the idea of a cyclopean eye, since it divides the eyes into four separate and distinct parts, but is needlessly complicated in its practical application. Second, the method brought forward by Prof. Knapp, in which the numbering [illegible] the nasal side of each eye and goes on continuously to [illegible]al side, 90 degrees being the vertical in both eyes. To this method less objection should be made, practically, than to the other, for it is simpler, easier to use, and the liability to confusion is less. The objection from a scientific standpoint is, however, the same. It does not conform to the idea of a cyclopean eye, but divides the visual apparatus into two lateral halves, for which we can find no warrant either in physiology or pathology of the visual organ. Neither can I see any practical advantage. You have two semi-circles with the gradation running in opposite directions, which is not in accordance with the use of the protractor in any other branch of scientific work.

This question is not a new one, as you are aware. In 1885, or thereabouts, a good deal was said about it in Europe, and the vertical meridian was strongly advocated by many as the point of departure for numbering. In 1887 I sent a communication to the *Annals d'Oculistique*[1] strongly upholding what has since become known as the American system, from its almost universal use in this country. In taking only one semicircle, commencing with zero at the left hand and going on to the right as the hands of the clock move, to 180, for both eyes, we are committed to no law of aberration, use a strictly scientific method and have only one direction to hold in the mind in the reading of the position of the axes. Nothing could be simpler, nothing more efficient, as it conforms fully to the requirements of the ideal cyclopean eye. I can see no just grounds for abandoning it for one which possesses none of these advantages, but has considerable disadvantages of its own.

Dr. John E. Weeks, New York—I want to protest against the idea of starting out in the refraction of an eye with the belief that symmetry exists in the sense in which it has been spoken of here to-day. I agree with Dr. Burnett, that we must regard the eye as a single organ. I have been brought to this belief by the examination of the cases coming to my office. I looked over the cases seen in my office in one half of the year 1901 and found that they numbered 473, and that of these cases only 56 presented the condition of symmetry. In 275 cases there was asymmetry, in 92 astigmatism of one eye only, and in 50 no astigmatism. I believe that if a man starts out with a preconceived idea that he is going to find a thing, he is very apt to find it, whether it exists or not, and my position is simply one of caution, that is, to urge the commencing of an examination without any preconceived idea of what you are going to find.

Dr. Knapp, in closing—As to Dr. Weeks' remarks, I did not start out with the preconceived idea of finding astigmatism. The idea was forced on me, as it will be on any one who examines the eye. It was not until 1857 that by measuring the eye this imperfection was found, and it was that which explained why cylindrical glasses improved sight. The man who in 1857 at the German Ophthalmological Society at Heidelberg brought out that idea was your humble servant, and the man who opposed it was Donders.

Dr. Risley has said that in symmetrically arranged meridians if the axis is 105 in one eye it will be 75 in the other; why not denote these identical meridians with the same number?

As to the field of vision, there is no mode of describing or recording it in letters and numbers simply and correctly that I know of. Authors say a foreign body is so far up or down, or so far away from the papilla, etc., while with the method I propose we can go all the way around and put the location down definitely. It always is at the crossing point of a meridian with a parallel.

With regard to the mechanism of the motions of the eye, both eyes act together as one, "the cyclopean eye," but I do not see what the cyclopean eye has to do with a description of the anatomic conditions of each eye, the abnormities of which, with the differences between the two, we have to find out, to preserve in our records, to send to the optician to grind glasses to order, which correct these abnormities, and to send to the press. Is it not desirable to have for these descriptions of our daily work the simplest, the most correct, the most scientific expression, to be understood at sight all the world over?

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[1] Apropos de la notation uniforme et internationale de l'astigtisme.—Annals d'Oculistique, T. 98, p. 166.

AMEBIC DYSENTERY IN MICHIGAN.[*]

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The recording of a single case of amebic dysentery can be justified only by particular circumstances. In this case the geographic source of the infection is my chief reason, a secondary cause being the desire to emphasize the need of further work in this class of cases.

THE CASE IN POINT.

History.—H. S., farmer, 30 years old, was admitted to the medical clinic of the University Hospital, Ann Arbor, Dec. 6, 1901, on account of frequent loose stools, containing blood and mucus, pain in the abdomen, tenesmus and loss of weight and strength. The family history is negative. With the exception of chicken-pox, measles and diphtheria in childhood, the patient has always been well up to the present illness and continued his work until the day of admission. He states that his food and eating habits have always been good; does not use alcoholics. Drinks well water, the well being 24 feet deep, 100 feet from the barn, free from contaminations and the water considered unusually good. He does not remember having used other water within a recent period. Has not been out of the state since 1893, when he was in Chicago for a short time.

Present Disease.—The present disease began in August, 1901, with a griping pain in the lower abdomen. The stools soon became thin and watery. Bearing-down followed evacuation. There have usually been from six to twelve stools a day, sometimes as many as twenty. The stools have sometimes contained blood and mucus, but not always. They are often very small. Thinks he has not been free from diarrhea more than a day at a time since the disease began. He took treatment, the details of which are not known, but was not relieved; he grew weaker and lost about fifteen pounds in weight. The patient has no other subjective symptoms than those noted.

Examination.—Frame of medium size; muscles fairly well preserved, panniculus thin. Appearance not very ill; mind clear. Skin pale; no edema; tongue pale, faintly marked by teeth, thin white coat, otherwise negative. Examination of lungs negative. Heart negative, except soft systolic murmur in pulmonary area.

Abdomen: About an inch below level of ribs, slight fulness below and to left of umbilicus. Palpation shows a cylindric mass about an inch in diameter in this region; percussion over it tympanitic. No visible peristalsis. Examination of other parts of abdomen and spleen and liver regions negative.

Examination of rectum reveals blood-stains about the anus, a bloody and purulent fluid in the rectum. The mucous membrane of the rectum shows a number of small irregular, slightly elevated gray patches with red margins. The gray coat is very thin and can not be removed by mopping with cotton. Two thick and reddened valves can be seen.

The urine for 24 hours amounts to 700 c.c. sp. gr. 1025. Chemical and microscopic examination negative. The blood shows 4,730,000 red cells, 10,441 leucocytes per c.mm., hemoglobin 90 per cent.

A small quantity of reddish mucus was brought to me in the laboratory when the first rectal examination was made. The appearance of this was so characteristic of amebic enteritis that I mentioned the fact. At the first glance through the microscope, at a fresh drop, large numbers of Charcot's crystals were seen, and among these were several large and active amebæ, containing red blood corpuscles. The patient remained in the hospital three weeks. In this time the stools, the liquid, obtained through a speculum, from the rectum and the material adhering to a rectal tube, usually contained mucus, blood corpuscles, leucocytes, Charcot's crystals and amebæ. Sometimes there were small masses of columnar cells, or very small superficial sloughs. Eosinophile cells were rather numerous in the stools. (10 per cent. eosinophiles in the blood.)

The Amebæ.—The amebæ presented the same characteristics of size, refraction, inclusions and motion as those I reported in 1891, in Texas, and others that I have seen in dysenteric cases in other places. In the present case I measured a number of the parasites, alive, when as nearly round as possible. They ranged most frequently between 20 and 35 microns. The largest one was 38 microns. Not many were less than 20 microns. They usually contained red blood corpuscles, sometimes being as if stuffed full. The nucleus could occasionally be made out. In some cases there were highly refracting, somewhat greenish vesicles which at times showed changes of shape and size. The stools were usually soft, sometimes watery, generally small but sometimes amounting to 200 or 300 c.c. The amebæ were only found in the mucus or small sloughs.[*]

The number of stools was from three to ten daily, except on one day, when there was only one. The odor was more offensive in the beginning than I had usually found it in amebic dysentery. The fecal part contained many bacteria, as usual. After ten days' treatment soft, partly formed stools appeared, without mucus, with few blood-streaks, and containing Charcot crystals but no recognizable amebæ. At this time, as there was a tendency to constipation, a dose of Carlsbad salts was given. This was followed by several watery stools. In a small bit of mucus in the second stool hundreds of active amebæ were found. The superficial diphtheritic patches in the rectum cleared up quickly, but left two superficial ulcers, not undermined. These quickly healed, and by the end of two weeks the mucous membrane was less red and swollen. The thickening in the left side disappeared. The rectal tube caused much less pain than at first. The mass in the left side of the abdomen gradually disappeared. The temperature reached 100.4 the day of admission, but then fell and after the third day never exceeded 99 F.

Treatment.—This consisted chiefly in the use of quinin enemata. This was given at first in quantities of 500 c.c., all the patient could take, of one to one thousand solution. The patient retained this for one to three hours usually. Later he took 2000 c.c. of 1:2000 solution. The amebæ continued active all the time and no marked evidence of improvement could be seen in the other elements of the stools, except that the feces became slightly more consistent. Later, benzozone was given by the mouth in quantities of 1500 to 2000 c.c. of the 1:1000 solution daily. At this time we were not aware of the best method of preparing the solution, and made it up fresh every morning. There was no effect on the activity of the amebæ. The stock of benzozone then gave out and could not be renewed in time to give a more thorough trial. The patient gained 3½ pounds while in the hospital. He was then obliged to go home, where he continued the quinin enemata for three months, keeping a record of his stools and other data and reporting at intervals. He steadily gained weight and had only one or two stools a day. Stools passed in the laboratory on his visits always contained live amebæ, though the stools had partly lost their dysenteric character. March 28 he was put on sublimed sulphur, 20 gr. t.i.d. During the next month he remained about the same. Blood and mucus occasionally appeared with the stools, but the stools were less fluid. Amebæ were always to be found. After a month, April 29, he was put on 10-grain doses of sulphur four times a day. In the three weeks after that he felt better than at any time since the disease began. He had one or two stools a day and amebæ could be found in only small numbers, in minute bits of mucus.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

[*] The patient's blood serum was tested with a culture of the Shiga bacillus kindly sent by Prof. Flexner, but did not cause agglutination. Cultures of the stools were negative so far as the specific bacillus was concerned. These observations, as well as injections in cats and other studies, were made by Dr. W. E. Griffin, who was obliged to interrupt the work in order to appear before the Naval examining board, and being ordered to report for duty soon after, his investigations were abandoned. I have to thank him and my assistant, Dr. D. S. Grim, for many of the notes made on this case.

RARITY OF THE CASE.

From the facts detailed there is no doubt the case is one of amebic dysentery. It is the first one I have seen or heard of in Michigan, and as the local origin can hardly be doubted, is of particular interest. "Dysentery" is frequently reported in Michigan, according to the reports of the State Board of Health, but very little has been written on its occurrence here, judging from the scanty references in the Surgeon-General's index catalogue and in periodic medical literature. I have not been able to see an epidemic. Many cases diagnosed as dysentery have been sent to my clinic, and I have seen others in consultation. None had histories closely resembling any of the clinical forms of amebic enteritis, and the conditions of the stools were in general not like those of acute dysentery or of the chronic amebic form. Most cases were chronic diarrheas secondary to disease of the stomach or to acute enteritis. Some were diarrheas of pernicious anemia and autopsies on some of these cases showed no characteristic lesion in the intestines. Others could be classed clinically as catarrhal dysentery, and in one of the most severe of these, seen with Dr. George W. Palmer of Chelsea, with perforation and abscess pointing in the femoral region, there were extensive superficial ulcers in the colon, altogether different from those in amebic cases. Perhaps some of the dysenteric cases reported in Michigan belong to the specific bacillary form, the relations of which have been so admirably worked up by Dr. Flexner, but the existing reports do not enable one to be certain of that.

THE DIAGNOSIS.

Although the *Ameba coli* is a very striking object in its characteristic motion, those who have not seen it are likely to mistake for it various kinds of cells in stools. A number of these have been shown me in my laboratory by otherwise competent microscopists. The most puzzling things for the inexperienced observer are large epithelioid cells with violent protoplasmic motion in the body and with consequent movements in the sides. If one waits for the occurrence of true ameboid motion before making a diagnosis all such errors can easily be avoided, and if the stools are examined fresh, or what is often better, material obtained by passing a rectal tube, and the bits of mucus picked out, amebæ can easily be found if they are present.

HISTORY OF AMEBIC INVESTIGATION.

The finding of such a case as the one now reported recalls many interesting facts in the history of dysentery and of the amebæ found in stools. Although amebic dysentery was early looked upon as the dysentery of the tropics, largely owing to Kartulis' epoch-making observations and the striking relation of amebæ to "tropical" liver abscesses, it could not be forgotten that the parasites were first recognized in St. Petersburg (aside from the less important observations of Lambl, Lewis and Cunningham), and in chronic dysentery. I claimed, in a paper accepted for publication in October, 1890, but not printed until the next year, that ameba coli was probably a parasite having a world-wide distribution. The anatomic investigations of Councilman and Lafleur, the most important in many respects hitherto made in intestinal disease, and the discovery of the ameba in such different parts of the country as Baltimore, Texas, Philadelphia, Cincinnati, Chicago, Boston, Cleveland and Atlanta tended to fix the anatomic and geographic, as well as the clinical features of the disease. Owing to the difficulties in the way of assigning the exact etiologic relations of the amebæ, the observations just mentioned would have been of less value had it not been for discoveries in acute dysentery, both in and outside the tropics. The observations in these cases began as early as the most important ones in amebic dysentery, and culminating in the demonstrations of Shiga and Flexner, distinguish a very important group of cases, and enable us to study more accurately the nature of diseases belonging to the class of dysentery wherever found. At the same time, they have not lessened the diagnostic importance of *Ameba coli* nor made the need of further study of that parasite less imperative. On the contrary, they throw in a stronger light the close relation of the animal parasite to certain widespread, clinically important, and therapeutically difficult intestinal diseases. We must still learn the exact relation of the ameba coli to dysentery and intestinal ulceration, not to mention the remoter complications in the liver and thoracic organs. We can not as yet say whether the amebæ begin the anatomic alterations by themselves, or in association with bacteria introduced or normally living in the intestine, or whether they are nosoparasites, finding favorable seats for growth in lesions caused by other germs. That their association is purely accidental becomes less and less probable with the accumulation of data regarding the peculiarities of the intestinal changes. Direct and unequivocal proof, as by inoculation, is still lacking, and, from the difficulties in the way of cultivating amebæ, seems almost impossible. The results following the injection of material containing amebæ into the rectums of animals are not free from sources of error and have been contradictory in the hands of various investigators. The most important results are those of Dr. H. F. Harris, and, though they require confirmation, they deserve more attention than has hitherto been paid them. Harris[1] cultivated all the bacteria from dysenteric stools, but though he was unable to produce proctitis or colitis by injecting the cultures in animals, he succeeded (in young dogs) with the stools containing amebæ, even causing liver abscess, with amebæ. However, these experiments were few, and in view of the fact that Gasser produced colitis in cats by injections of garden earth, Sorgo with non-amebic dysenteric dejections, and also the fact that the previous observers have usually produced lesions not identical with those in human amebic enteritis, we must await further observations.

OPINIONS OF AUTHORS ON THE AMEBA.

The occurrence of amebæ in the stools of persons apparently well, or in those of patients with cholera or other diseases, or in the feces of lower animals, can not be considered proof that the amebæ found in dysentery have no pathogenic relation. I published an observation in 1891 showing the presence of severe ulceration in the cecum, with amebæ, in a patient without history of dysentery and with normal stools. Kruse and Pasquale pointed out very early that it was not necessary to assume the existence of two varieties, pathogenic and non-pathogenic, since the differences observed might be due to variations of disposition on the part of the host. On the other hand, our imperfect knowledge of amebæ in general, and the difficulties of distinguishing species or varieties make it highly probable that there are different kinds with different pathogenic characters.

Observations showing the occurrence of amebæ in healthy men have been much used, as mentioned above, to disprove the possible causal relation of amebæ coli, and those of Schuberg have been reiterated over and over again, and often as if they were typical of the conditions in all parts of the world. Schuberg, in brief, gave laxatives to persons without evidences of intestinal diseases. In the examination of "about twenty stools," he found amebæ in "about the half," "sometimes in tolerable numbers." He thought it "probable that amebæ (and flagellates, which he also found in his cases) occur as commensals in the human intestine extraordinarily frequently if not regularly."

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[1] Virchow's Archiv. Bd. 166, p. 67.

In the first place, it may be remarked that Schuberg's conclusions hardly fit his observations; in the second place, that even if a certain parasite occurred in every case in one locality, it would not follow that the same parasite would also be found as widespread elsewhere. The observations of many early workers were opposed to those of Schuberg, also many later investigations, such as those of Janowski in Warsaw and Strong in Manila. The latter found amebæ in only eight out of two hundred cases treated with Carlsbad salts. The most recent investigator in this field, Zorn[2] in Munich, also had negative results.

My own early control observations were so different from Schuberg's[3] that at once after reading his article I began some investigations, giving Carlsbad salts in dose of one-half to one ounce, to all patients who had no contra-indication, and examining the stools as soon after they were passed as possible. More than two hundred such cases were examined, when I discontinued the routine examinations, but I have since then examined many other cases in the same way. In no case, except the one now reported and another to be mentioned below, were amebæ found. Flagellates, such as Schuberg also found in his small series of cases, I found six times in the first two hundred cases, and several times since then, but only in cases of diarrhea, never in persons with previously normal stools.

The exceptional case was one of ulcerated cancer of the rectum with diarrhea. On two occasions amebæ were found in the stools. The parasites were smaller than those I had previously seen in dysentery in Texas, the largest measuring 20 mm.; they contained no red blood corpuscles and, in fact, very few inclusions of any kind. They had a more marked tendency to travel in one direction than is common in ameba coli, and less ameboid motion.

From these observations I think it can be assumed that amebæ are not present in "about one-half" of all normal intestines, in all parts of the world. The determination of the intestinal fauna in various localities may aid in clearing up the etiology of intestinal disease and its comparative neglect is difficult to explain.

But, admitting that there are different varieties of amebæ that may infest the intestine, the question remains to be answered whether they can be distinguished other than by the effects of inoculation in animals which, as we have seen, are not altogether conclusive.

NOMENCLATURE OF VARIETIES OF AMEBAE.

The difference in size of the amebæ in my case of cancer of the rectum as compared with those in dysentery is very striking, but in other cases the matter of size has not been so easy to use. In the literature there are certain contradictory observations and the subject has been still further confused by premature efforts at nomenclature. Future investigators should avoid adding to this, but should endeavor to clear up the present contradictions. When Loesch gave the name *Ameba coli* to the organism he found he did not define the specific characters with sufficient fullness, though he did as well as the existing knowledge of protozoa permitted. Councilman and Lafleur, in giving a new name, *Ameba dysenteriæ,* without adding to the zoologic knowledge of the parasite, hardly realized the needlessness of such an innovation. The fact that so eminent an authority in zoology as Blanchard had already suggested still another name, *Ameba intestinalis,* also without greater definiteness, was an unfortunate example, but not a justification. Quincke and Roos attempted a more scientific nomenclature when they made three varieties of intestinal amebæ, *Ameba coli Loesch, sive felis,* characterized by being pathogenic for man and cats, *A. coli mitis,* mildly pathogenic for men but not for cats, and *A. intestini vulgaris,* non-pathogenic. Unfortunately, there are discrepancies or contradictions between their further description of the different varieties and the descriptions of most other investigators. Quincke and Roos described *A. coli felis* as being small, 15-25 microns in diameter and without blood corpuscles. The size of the amebæ in dysentery varies considerably according to different observers: Kartulis, 12-30 microns; Lafleur, 6-35 microns; Osler, 10-20 microns; Kruse and Pasquale, 10-50 microns; Craig, 5-35 microns, most frequently 15-25 microns. Though large amebæ seem to have been more frequently noticed than small ones in tropical cases, this has not been uniformly so and some severe cases in temperate regions have shown small amebæ with red corpuscles, those found by Zorn in Munich (1 case) measuring 14-22 microns, or about the same size as in the Cicilian case of Quincke and Roos. One of the most recent, as well as one of the most competent students of dysentery, Strong, goes so far as to believe that small amebæ found in dysenteric cases are non-dysenteric, but in giving these the name *Ameba coli,* the larger forms that of *A. dysenteriæ,* he does not seem to have proved his right to act as a sponsor any more than did Roos.

The matter of inclusion of red blood corpuscles, which has been used as a partial diagnostic feature, is still somewhat uncertain. Roemer[4] thought the presence or absence of blood corpuscles accidental, depending on the presence of blood in the intestinal contents. Sorgo[5] saw the amebæ become free from blood corpuscles, though there was still blood in the stools, in cats. In my case of cancer with small amebæ, there were no blood-inclusions, but there was very little blood in the stools at that time. The point is one that should be capable of experimental proof, and may be of more value than it now seems.

In conclusion, I wish to add that in view of the rapid advances made in our knowledge of acute dysentery in the United States, largely by Flexner and his pupils, and the fundamental work done in chronic dysentery by Councilman and Lafleur, it seems as if the inviting field offered by the study of the amebic form should attract more workers in this country than has been the case.

DISCUSSION.

Dr. Thomas McCrae, Baltimore—The paper just read is of special interest in reference to the question asked in Baltimore whether or not amebic dysentery is traveling northward. Several years ago one of these cases was admitted in Dr. Osler's ward, the patient never having been out of the state of Maryland and at that time this was contrary to the opinion expressed that practically all cases came from further south. Since then, however, there have appeared many cases that have never been out of the state of Maryland, where the disease is not infrequent. A point of especial interest, recently observed, is that an increasing number of cases are to be found in children and it has been found that some of these have occurred in children who have become infected through drinking "gutter-water." The report made by Dr. Dock has been of special interest as going to prove the wider distribution of the disease in the north.

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[2] Deutsches Archiv für klin. Med., Bd. 72, p. 366.

[3] Centralblatt für Bakteriologie und Parasitenkunde, Bd. 13, 1893.

[4] Münchener med. Woch., 1898, No. 41.

[5] Wiener klin. Wochenschrift, 1897, No. 18

Dr. James J. Walsh, New York—During the past year at least two cases of true amebic dysentery have been reported in New York City. One of the patients had not been outside of New York City for years, the other had never been out of the city. It seems, therefore, that the ameba has crept as far north in its endemicity as New York City.

Dr. E. Libman, New York—At Mt. Sinai Hospital we have encountered a large number of cases of amebic liver abscess. During the past three years we have examined specimens from at last ten cases of this kind in which no history could be obtained of any residence outside of New York City.

Dr. Dock, in closing—I should have mentioned in my report that I excluded any possibility of infection from soldiers who returned from Cuba or the Philippines. Since the Cuban war there have been a number of cases of tropical infections from returned soldiers. In view of the wide spread of the disease, the vague symptoms that are present and the absence of the symptoms known as dysenteric, it is very important that all stools be examined more carefully than they have been in the past. Finding the organisms early gives a better basis for making a prognosis than anything else.

WHAT CASES OF PLACENTA PREVIA CAN BE BEST TREATED BY CESAREAN SECTION?*

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BOSTON.

It is not my intention to go over the whole subject of placenta previa and the various methods of treatment, because this has been done so thoroughly in the past two years as to be unnecessary. It is worthy of remark, however, that the importance of this condition has been forcibly brought home to the profession by the advocates of Cesarean section, and the treatment of this serious condition has taken on new interest.

At the time when I reported[1] the first entirely successful Saenger-Cesarean section for placenta previa there was little on record of value regarding the frequency and mortality in the various forms of this complication. At that time I had delivered but one case with placenta previa, and that only partial, in which rupture of the membranes allowed the head to engage, and mother and child survived, but I had in mind other cases with less happy results. All the statistics, however, that were available emphasized the serious nature of certain forms of placenta previa. The study made at that time of the literature bore out the statement made "that this was the most fatal complication with which the obstetrician had to deal, and under the most favorable conditions (meaning by that the results of well-conducted lying-in-hospitals) and in the hands of experts, showed a higher death rate, fetal and maternal, than almost any other obstetrical condition." The statistics, it is true, as later writers[2] have stated, were old, but the obstetric teaching in regard to this subject was no more modern, at least, so far as treatment was concerned.

It is not necessary to go over the entire ground on which the resort to Cesarean section in certain cases was held justifiable, but a review of those indications in the light of subsequent additions to our knowledge of the subject, will be of interest.

The indications appeared to be as follows:

1. Cases of complete previa.
2. Cases of *previa in primiparæ* when signs of *fetal* or maternal exhaustion are evident.
3. When the condition of rigid os is present.
4. Where there is a history of previous operative delivery.
5. In transverse positions and in cases of prolapsed cord, if the cord is not easily returnable.

Advocating section for these conditions is far from advocating section for all cases of placenta previa, as my paper has been quoted. We should not proceed too fast in the advocacy of new treatment, and while the surgical invasion of the obstetric field has only begun, I do not believe that section will be accepted as a cure for all obstetric complications until we admit that the pains of normal labor should be accepted as indications for interference.

The paper read by Dr. Gillette[3] at the meeting last year was a notable contribution to our knowledge of this subject, and his statistics of mortalities show that the condition is still a serious one. His report of the results of 216 cases in the hands of various men show 34 mothers lost, or a death rate of 15 1/3 per cent., and 96 children, or 44 1/3 per cent. As to the variety of implantation, there were 88 cases of centralis, 20 mothers lost (22 8/11 per cent.): while 66 children were lost (70.5 per cent.). Of the other forms of implantation (partialis and marginalis), 128 were reported, with 14 deaths for the mothers, a death rate of 11 per cent., and 41 of the children, or a death rate of 31.5 per cent.

Shauta[4] in a recent article, while arguing against section, gives the following figures: Placenta previa centralis, 50 cases, with the death of 9 mothers (18 per cent.), and 35 children (70 per cent.), while in 184 cases of partial previa he lost 7 mothers (3.8 per cent.), and 92 children (50 per cent.). These statistics do not differ from those quoted in my original paper, of Jardine,[5] who (1896-8) reported 12 complete, with 16 2/3 per cent. maternal deaths and 66 2/3 per cent. fetal, except that they are enough higher to prove that it is even more fatal than we originally believed.

In primiparæ this condition can not be said to be so rare as not to require consideration, as it occurs in about one in eight cases of previa. Fry[6] in reporting 14 cases, reports 7 cases in primiparæ.

Reason would seem to indicate that operative interference in primiparæ must be slower and more difficult than in multiparæ, because of the firmness of the parts.

It has been said, however, that the os with placenta previa is more easily dilated than if normal. This statement, however, should be changed, for there have been cases enough reported and evidence enough adduced in the past two years, to warrant the statement that the os is more easily torn than normally, while doing manual dilation and extraction; in fact, there are many cases of spontaneous rupture of the uterus in the presence of placenta previa.[7] [8]

Schultze,[9] in a discussion of uterine rupture, gives as a cause paralysis of the region of placental insertion. He refers to the fact that during pregnancy the uterine wall develops less in the portion where the placenta is attached than elsewhere, and that when the placenta is adherent, the portion of the uterine wall left after its separation is thin. Failure of this area to contract he terms paralysis of the area of placental insertion.

Anatomically no part of the uterus is more liable to rupture than the lower segment during labor, not only on account of the retraction of the muscular fibers of the uterus and the consequent thinning of the lower

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

segment, but to the causes of rupture as pointed out by Schultze. If spontaneous rupture is not uncommon, what may we expect with forcible dilatation and delivery?

The history of previous operative delivery in the case of a normal pregnancy has led men of great experience to advocate broadening the indication for section in cases with lesser degrees of pelvic contraction. The study of 1000 cases by Dobbins and Williams[10] shows most clearly the importance of a history of operative delivery in considering the treatment necessary in future pregnancies. These conclusions were: "that it is the border line of disproportion between fetal and pelvic diameter that we get the worst results for the fetus and it is the border line cases that are most frequent. First the fetus is shocked by severe forceps compression of the brain; then the heart is shocked by the manipulation of the cord necessary in version, and finally, if it still lives, it must run the gauntlet of asphyxiation." Admitting for the sake of discussion that many babies are small and not absolutely at full term, let me ask how a severe operative delivery helps a child already severely shocked and enfeebled?

In the past two years there is hardly a city in this country in which Cesarean section for some condition has not been performed, ranging from rigid os to eclampsia, and everyone is familiar with the ease and success of the operation. During the same time the number of craniotomies has grown steadily less, due not only to the improvement in surgery, but to the profession's awakened conscience.

When Dr. Ford[11] of St. Louis, in 1892, advocated Cesarean section in certain cases, on purely theoretical grounds, he did so when the death rate from most abdominal operations was still very high, but he was convinced that the do-nothing or the uncertain and indefinite methods then in use might be well superseded, in a large number of cases, by an operation which even then was promising the brilliant results it has since obtained. The most important point on which a resort to section was based was the fact, that we have to deal with two patients, and our whole duty is not conscienciously performed if we deliberately sacrifice or neglect the interests of the one in favor of the interests of the other. The discussions of the results obtained in the treatment of placenta previa which have been brought out in the past two years, are very important, for before that time the reports of large numbers of cases were few and in many instances combined old pre-antiseptic results with later ones, in such a manner as to be of little use in forming proper judgment.

What has been the sum total adduced by the advocates of no change from old methods? The gradual lowering of maternal mortality has been brought about by the sacrifice of larger and larger percentages of children. Fry[6] reported 14 cases treated as follows: Bi-polar version and slow extraction 9 times, membranes ruptured and delivery left to nature once, tampon and natural delivery once, forceps extractions 4, including one application after coming head. All of the mothers recovered and 5 out of the 15 infants were born alive. Of the infants lost, 2 (twins) were not viable; one, in fact, was at the seventh month of utero-gestation and 4 were dead when the case came under observation. The death of 3 infants occurred during delivery.

Let us consider his cases briefly, the kind of placenta with which he had to deal, as these cases are among the few that are recorded in a manner to permit study:

Case 1.—Edge of placenta felt, membranes ruptured, live child.

Case 2.—Placenta tissue felt, tampon, child dead.

Case 3.—Mass of placental tissue hanging down behind symphysis, delivered by forceps, child dead.

Case 4.—Primip., 5 months' pregnancy, twins, central placenta. Placenta perforated with finger, fetus seized and brought down. Fetus slowly extracted as far as the head, which was imprisoned by the undilated os. Traction made downwards and the skull opened with a pair of scissors; head collapsed and extracted. Second fetus found in utero treated in same manner.

Case 5.—Central placenta previa, tampon, followed by version. Dead infant slowly extracted.

Case 6.—Os slightly dilated, placenta felt; bipolar version. Slow extraction. Infant dead.

Case 7.—Primip., full term. Here no labor pains; placenta felt at os. Bipolar version. Infant extracted dead.

Case 8.—Placenta felt at os; 8 months' pregnancy. Infant extracted dead. Bipolar version.

Case 9.—Labor set in at term with eclampsia. Head presented with os dilated, placenta attached to left side. Forceps applied, dead infant delivered.

Case 10.—Placenta presenting. Bipolar version. Child extracted dead.

Case 11.—Placenta presenting. Bipolar version. Infant born alive but died next day.

Case 12.—Placenta felt at os. Bipolar version and extraction of a living child.

Case 13.—Placenta could be felt through os. Bipolar version and extraction of the after-coming head with forceps. Child recovered.

14. Placental mass in left side, head presenting. Forceps applied and living child extracted, which died next morning.

Two cases (1 and 14) edge of placenta felt, one delivery normal after rupture of membrane, one by forceps.

Ehrenfest,[12] in his paper on "The Impropriety of Cesarean Section in Placenta Previa, with Remarks on a Rational Method of Treatment," the major portion of whose bibliography is later than 1898, arrives at the following conclusions: "Saving the child's life should be one of the main tasks of the obstetrician, but it must not be forgotten that there is an indisputable rule that the mother's life ought to be valued higher than the child's. We can not deny that the excellent results of the modern treatment of placenta previa have been gained only at the expense of fetal life. We can not deny that the result of this treatment in regard to fetal mortality is very unsatisfactory."

Dr. Harris[13] at the Pan-American Medical Congress reported nine cases treated by rapid manual dilation, followed by delivery, with only three children saved.

Zinke[14] gives his fetal mortality in placenta previa in 40 cases as 55 per cent., but he does not give an analysis of the position of the placenta.

Stetson,[15] in his report of 1000 labors, gives the results of the treatment of five cases of placenta previa, as follows:

Case 1.—Complete. Ergot, full doses. Rapid dilatation; version; forceps.

Case 2.—Partial previa. Dilation; version. Child dead.

Case 3.—Partial previa. Dilation; version. Forceps.

Case 4.—Placenta covered os. Dilation; version; forceps.

Case 5.—Six months' pregnancy. Child dead.

These are not cases selected to prove or disprove any position, but are the most recent of published American results. If necessary to take figures obtained under the very best hospital conditions abroad, to prove that in the hands of the most skilful, the child can expect little, let us take the figures of Shauta,[4] given under date of Feb. 26, 1902, and we find little change from those already given. He says: "The fetal mortality with our present treatment is a high one because we treat expectantly and refuse to perform immediate extraction as a procedure dangerous to the mother."

Out of 234 cases of placenta previa, 127 children were lost, a percentage of 54. There were 35 deaths in children in the 50 cases of placenta previa centralis, 70 per cent., leaving 92 cases of placenta previa of varied types (excluding placenta previa centralis), 50 per cent. mortality.

The question we should put to ourselves in dealing with placenta previa is this: Are we justified in advocating and performing an operation which may have a slightly higher death rate for the mother, but which offers 95 chances in 100, at least, to a fetus alive at time of operation?

The profession in this country certainly have answered this, and have answered it affirmatively in substituting Cesarean section for craniotomy and premature delivery in cases of pelvic obstructions. both of which procedures have an extremely low maternal mortality, but a very high fetal. And again, how many of our practitioners are willing to uphold Leopold[16] when he says: "In private practice, owing to unfavorable surroundings, craniotomy, in contracted pelvis, is preferable to Cesarean section." When the fetal heart is weak he perforates.

The unfavorable surroundings in private practice, of which Leopold complains. are not looked on in this country as contra-indicating conservative midwifery, and it is by reasoning on conditions prevailing abroad that the opponents of Cesarean section for any form of placenta previa in this country make their greatest mistake. Then, by giving us the statistics and results of hospital cases in expert hands, they so minimize the danger, to the student, that every graduate in medicine looks upon himself as competent to treat any case of placenta previa in private practice, until some frightful experience teaches him differently.

If the success of American midwifery is not a sufficient refutation of the treatment proposed by Leopold, think over in your minds the thousands of successful capital operations which have been performed in private houses. for every conceivable condition, before deciding that section in private practice is not justifiable.

Has the child a right to its life? This has been so thoroughly considered in years gone by, in discussing craniotomy, that it hardly seems necessary to discuss it again, but if the child has a right which forbids the direct taking of its life, "is there anything but a difference in degree between perforating the head, an operation which we know will destroy the child and in performing an operation which of itself will result in the loss of one-half to four-fifths of the children."

Williams[17] says, in discussing contracted pelvis: "If we are operating solely in the interests of the mother, induction of labor appears to be a very excellent operation, but under the circumstances, why not do abortion at a much earlier period, and save all the weary months of pregnancy?"

We may well ask, to what would such a process of reasoning lead if accepted? It is urged that a large proportion of these children are not at full term; that may be so, but in over 90 per cent. of reported cases the child has lived in utero beyond the period at which it is viable, and all the children delivered by Cesarean section in the presence of placenta previa since 1899 have been delivered alive and have lived a certain length of time afterwards, as follows:

Tait;[18] child lived one *month*, dying of bronchitis. (Porro.)
Donoghue;[1, 19] 2, 1900, both alive. (June, 1902.) (Sanger.)
Hare;[20] 13 days, inanition. (Sanger.)
Gillette;[21] 1, alive. (Porro.)
Covington;[22] 1, alive. (Sanger.)
MacCalla;[23] 1, alive. (Porro.)
Matolli;[24] who did Cesarean section after trying to pack vagina, lost child. (Sanger.)

The resort to a Porro I do not believe to be indicated in a case of previa, unless otherwise complicated, any more than it is in cases of contracted pelvis.

Andrews,[25] in summarizing his paper on "Cesarean Section vs. Craniotomy," says: "I will say that craniotomy on the living fetus is very, very rarely justifiable, unless the choice of the mother to sacrifice the life of her unborn child, rather than subject her own life to a slight risk, renders it justifiable." If the mother has, in cases like placenta previa, or pelvic obstruction, the right to decide what treatment the attending physician shall employ, to the end that she shall not then be exposed to any danger, that her child may live, or shall have the right to demand an operation (Porro) that she may not again be exposed to the dangers of pregnancy, why has she not the same right to decide that any given pregnancy may be attended with more danger than she desires to risk, and call for its termination at any time she may elect? How many of the profession are willing to act as passive agents in carrying out such treatment?

The failure of the uterus to contract does not seem to be a good indication for a Porro. I believe that many cases of excessive hemorrhage will disappear if the operation is not performed with one eye on the time and the other on the field of operation.

In my cases. after removing the child from the uterus, I have waited and allowed the uterus the same time to contract and retract that I would allow if conducting a normal delivery. This I believe to be very important, and if, as in some cases, there seems to be danger from the loss of a small amount of blood, I would free one edge of the placenta, put a gauze wick through into the vagina and close uterus and abdomen, leaving placenta to separate later. The danger of ventral hernia following operation does not seem to be important if the incision is made through the rectus muscle and properly closed.

CONCLUSIONS.

Cesarean section in certain cases of placenta previa has a fairly well-defined standing; its limits can not as yet be accurately defined. At present it seems that the conservative Sanger should be performed in cases of:

1. Complete previa.
2. Previa in primiparæ in the presence of severe hemorrhage or a rigid os.
3. Where there is a history of previous operative delivery.
4. It should be considered in all cases of placenta previa where version is indicated if a reasonably skilled *surgeon is available*, and only an ordinary obstetrician.
5. All of these indications are based upon a probable viable child, 28 weeks of gestation and upward.

When the pendulum swings from the excessive amount of surgery taught in the medical school, to the proper teaching of obstetrics it may be necessary to revise these indications. While, aside from this, a man, as soon as he becomes an expert obstetrician, finds it to his advantage to gradually work into something better, for, as Dr. Price has expressed it, "There has never been a premium on practical obstetrics."

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DISCUSSION.

Dr. Rudolph W. Holmes, Chicago—I have dabbled in statistics, and I am positive that they are of only relative value unless they demonstrate the results of one body of men in a large hospital service; the gathering of case results from promiscuous sources never can give positive criteria to found a working hypothesis; seldom does a man report a fatal termination unless there be unique features about the case. In placenta previa statistics are absolutely worthless as regards mortality or method of treatment unless there be a clear differentiation between the several types of previa—the lateral, partial and central. The mortality of lateral previa is low; speaking very broadly, it is exceptional for lateral previa to terminate fatally, only when the type approaches the marginal form does its portent become more grave. Central previa, on the other hand, is always potentially very serious. In lateral previa it is not possible to lay down positive rules of conduct—often more or less temporizing measures will secure favorable results; more drastic procedures are reserved for special indications. In the central previa we may lay down very clear and positive principles which will answer for nearly all cases, but the treatment is always an active one. At this time I think it is a most pernicious teaching to advocate Cesarean section in central previa; it is a continuation of that *furor operativus* which so held the gynecologist some ten years ago. The first thing to do is to develop the treatment of placenta previa for the average man. When he knows that, then we can begin to talk of Cesarean section in selected cases, but as yet we do not know the possibilities of the obstetric treatment. To-day, perhaps, the most faulty treatment for placenta previa is the tampon, but for the general practitioner, the man with little or no obstetric technic, a well-applied tampon will give him the best results. I would be distinctly understood that I do not advocate the tampon for the obstetrician, but for the practitioner who has not the skill acquired by practice in operative obstetrics, or an adequate obstetric armamentarium at hand: teach students how to build a proper tampon, and much of its ignominy will disappear.

The best results of the future in central previa will come from the timely introduction of the colpeurynter, followed by internal version, or an early Braxton Hicks version. The cardinal principle should be to perform version as rapidly as is consistently possible, and to make the extraction as slowly as possible. Rapid extraction is the explanation of many a death from deep cervical laceration, and is the explanation of many a so-called rigid os—both being dependent on extraction before dilatation was complete. The high mortality of previa is due to hemorrhage and infection; the treatment as outlined above will do away with many deaths due to the former, and a proper application of asepsis will entirely eradicate the second. The possibilities of the future are well exemplified in the recent figures of De Lee, who reports 31 consecutive cases with one death, and this one death was a neglected midwife case.

It is a most egregious error to compare the percentage mortality of Cesarean section as usually given for the operation done on pelvic indications with the fatality when done for placenta previa. The usual figures, 5 per cent., mean results in selected, uncomplicated cases. Combining favorable and unfavorable cases together will still show a mortality of nearly 20 per cent. in Cesarean section; this latter figure was given me a short time ago as the mortality in the Ohlshausen clinic by one of his assistants. The fact is that the specialist rarely receives placenta previa cases first hand; the general practitioner gets them, wastes valuable time, and finally sends for the obstetrician, who must then do the section, if this new teaching is to be adopted. I would lay stress that the time never will come when the Cesarean operation in placenta previa will mean an uncomplicated case; it always will be an unfavorable indication for section. He who will compare the operation done on pelvic indication with that for placenta previa, he who will declare the mortality of previa treated obstetrically is 20 or 25 per cent., and surgically only 5 per cent., is dealing with the worst kind of sophistry. After the operation the woman still will be subjected to the dangers of post-partum hemorrhage—it will be necessary to tampon the uterus, which can not be effectively done through the uterine incision, so the only course to pursue will be to do an hysterectomy. Cesarean section for placenta previa should only be permissible in contracted pelves, and placing the relative indications somewhat higher than usual, and in old cicatricial contractions of the parturient canal where extraction would be hazardous. I agree that Cesarean section when done early will save more babies, but so long as 10 per cent. of babies born alive die within the first twenty-four hours, so long as nearly 25 per cent. die within the year, and 52 per cent. before fifteen, I claim the woman's life is worth more than the baby's, and her chances should receive the first consideration.

Dr. G. T. Harrison, New York—I would like to raise my voice against the use of any such operative interference as that for the treatment of placenta previa. The principal thing is to save the life of the mother; the child is a secondary consideration. All efforts should be extended to save both, but if the interests of one must be weighed with those of the other, the mother's interests should be considered first. I have the same opinion of statistics as Dr. Holmes. I recollect very well the witty remark made by Dr. Sims years ago when arriving at statistics on ovariotomy. He said: "My young friend had 100 per cent. of recoveries." "How is that?" said somebody. "Why he had only one case, and that got well." That was only a witticism, but there is a great deal of truth in it. Statistics can not be relied upon. A very good point was made by Dr. Holmes when he said that a Cesarean section is absolutely contraindicated when the patient has been examined, and when there is any fear of infection. In the greater number of cases you can fear infection, especially if the ordinary practitioner of medicine has examined the patient beforehand. I would not dream of performing a Cesarean section if the case had been examined before, unless it was an expert who did it.

The main thing that should catch our attention is that our efforts should be directed to diminishing the frightful mortality of the child, and I think experience has fully demonstrated that in treating these cases by slow extraction after a Baudelocque version, that if we ignore the child and consider only the mother, we will save more children and more mothers. We ought to save all the mothers, and by proper precautions we can. I have had a large experience with placenta previa, but I have never lost a mother, so that my statistics are very satisfactory. A large per cent. of the babies died. Of course, the great danger in these cases is the danger of infection, but that is largely eliminated by present methods.

The reader of the paper intimated that even when the head came down, danger from hemorrhage was to be considered. In all cases when the head comes down it stops the bleeding by acting as a plug. In those cases you have no trouble in the way of hemorrhage, and you can wait for dilatation, and when you put on the forceps it is just as easy as any other case.

Dr. Hugo Ehrenfest, St. Louis—In discussing this subject, some mention was made that the time was approaching when Cesarean section would be the only proper treatment in placenta previa. Another gentleman said it would be the school treatment of placenta previa. To-day the indication is rather limited, but not limited enough. It should be that no conservative Cesarean section be made in a patient who has been examined by someone who has not been clean.

Another question is how to make a diagnosis of placenta centralis in time. If the cervix is open enough to admit two fingers, we must make version or Cesarean section. We are not able to decide whether we have to deal with placenta previa centralis or partialis, in which case the hemorrhage stops immediately when the head comes down. I do not compare the statistics of Cesarean section and placenta previa, because that can not be done. We ought to have statistics of both. Cesarean section in selected cases gives us some very good statistics.

Dr. Donoghue, in closing—Any general practitioner who is competent to pack a vagina properly is also competent to do a Cesarean section, because his asepsis must be complete in either case. The second speaker spoke of no hemorrhage after rupture of membranes in partial previas. I expressly said that in that class of cases Cesarean section was not indicated, and it should never be used. It is a self-evident fact that rupture of the membranes allows the head to come down and forceps can be used. My advocacy of Cesarean section is based on a belief that the child has an undeniable right to life, which should be preserved to it, if possible. To go over the other points which have been mentioned in the discussion would simply be repeating the arguments of the paper just read.

TREATMENT OF TUBERCULAR PERITONITIS.

(Continuation from page 604 of the discussion on the paper of Dr. Porter.)

The postmortem examination was made by Dr. Fütterer, *one-half hour after death. General abdominal tuberculosis* of the ascitic variety and slightly enlarged mesentery glands and firm adhesions matting together the whole mass of intestines, was found. No foci were found in the lungs or pleura. There was no old tubercular disease of the tubes. The intestinal mucous membrane was not examined.

Cultures from the peritoneal cavity were sterile and there was no pus infection of the peritoneum.

The points of interest in this case are: 1. The insidious onset of the disease. 2. The persistence of normal temperature. 3. Extreme pigmentation of the skin without Addison's disease. 4. The presence of a tumor in the median line of the abdomen extending from above the umbilicus to the pubis; and the tumor being formed by the greater omentum becoming rolled on itself and filled with fluid. 5. The termination of the case, death following thirty-six hours after the operation with symptoms of hemorrhagic diathesis. This was probably due to a toxemia of some sort, the toxic substances probably being liberated as a result of the changes which occurred consequent on operation.

Case 2.—B. B. This patient was a young woman who was operated on for what was thought to be suppurative peritonitis following a rupture of the appendix. Her illness began suddenly with a chill and severe abdominal pain, which in the course of a few hours became localized in the region of the appendix. The temperature was high, ranging from 103 F. from the first. The abdomen soon became greatly distended, with marked rigidity of the abdominal muscles.

Operation.—The abdomen was opened through an incision along the outer border of the right rectus muscle, on the third day after the onset of the disease. The peritoneal cavity contained a large quantity of turbid fluid, the walls of the appendix and cecum were greatly thickened, but no rupture occurred. The entire peritoneum was thickly studded with tubercles and dense adhesions binding together the intestinal coils. The mesenteric glands were enlarged, some reaching the size of an English walnut. The appendix was removed, the cavity irrigated with salt solution and drained by tubular and gauze drainage.

The patient made a very slow recovery, leaving her bed only at the end of three months. As soon as she was able to travel, she was sent to Colorado. She remained there for two years and completely regained her health. At the time she left her bed, she weighed about eighty-five pounds. When she returned to this city after an absence of two years, she had gained fifty-five pounds in weight.

As a result of the operation she had a ventral hernia for which she was operated on in the summer of 1899, three years after the first operation. In operating for the cure of hernia, the abdominal cavity was again opened. Careful inspection showed that scarcely a sign of the former extensive tubercular disease existed; all the tubercles had disappeared; the peritoneum was everywhere normal in appearance. Intestinal coils were nowhere adherent. The mesentery glands had mostly resumed the normal appearance. There were a few calcareous deposits to be seen here and there in the mesentery. These were surrounded by a wall of white fibrous tissue. Several of these deposits with surrounding fibrous tissue, were excised and submitted to a microscopic examination. No tubercle bacilli were found.

Since that time the patient has resided in this city and has been examined a number of times. There are no signs of tubercular disease in any part of the body. The interesting features of this case are: 1. The acute character of the disease, simulating closely acute appendicitis and the beginning of suppurative peritonitis at the time of operation. 2. Extensive abdominal tuberculosis, a part of which must have existed previous to the onset of the symptoms, although the patient was apparently in perfect health. 3. The complete recovery from the disease, as was evidenced by the return of health and the disappearance of all tubercular lesions of the peritoneum.

Dr. Robert F. Weir, New York—This is a subject that interested the American Surgical Association last week and a good deal of liveliness was elicited in the discussion. If I were to get the opinion of all of you I think it would be something like this: It would be admitted that we do not know how the disease invades the peritoneal cavity, but we are able to decide that its infection comes partly through the genitalia in both sexes; we also know that the appendix occasionally gives rise to it, but in many instances we can not trace it at all. It will be also admitted that when a case presents itself to us where there is fluid in the valley we can decide usually and wisely decide on a distinct plan of treatment. The accumulation may be all over the abdominal cavity, while in some cases it is encysted. Occasionally we can treat these cases by waiting and get good results, but why do this? Why keep this child in whom the disease is most common waiting when puncture or, preferably, a small incision, is pre-eminently a safe procedure? In reference to the influence of *light and air, it is not believed that this plays an important* part. I believe when a cure or improvement is effected the reason for it is to be found in the free invasion of the cavity, which means excision through the peritoneum, which brings about reflex circulatory change all over this largely extended membrane. When, however, one knows or finds by incision that no fluid is present or that matted intestines present themselves, it is best to hold one's hand. Even in such arrested operations I have ocasionally found good results show themselves, though this is the exception.

Dr. A. J. Ochsner, Chicago—In looking over my own cases carefully and reviewing the literature on this subject I have come to certain conclusions which, it seems to me, are worthy of application in our clinical work. In the first place it seems that there is a certain class of patients suffering from tubercular peritonitis in whom medical treatment is better than surgical. This should consist in rest in bed, hygienic surroundings, aseptic food, and possibly certain remedies such as creosote and iodin. This form of treatment will probably enable 50 per cent. of these cases to improve. This relates to cases suffering from acute tuberculous peritonitis with ascites. There are two reasons why the surgical treatment is not indicated: 1. They do get well without surgical interference. 2. It has been shown that in acute tuberculosis of the peritoneum, with ascites, the surgical treatment was not followed by permanent cure when the operation was performed before the tubercles were fully developed, and for this reason this class should be excluded. There is, therefore, one particular class in which the surgical treatment is absolutely indicated, which comprises those cases that are not benefited after the internal treatment outlined above has been faithfully tried for several weeks. If an acute case is treated by hygienic measures and internal remedies for some months we frequently find that certain portions of the peritoneal cavity will become separated by adhesions. Nature tries to dispose of the tuberculous infection in this matter. In these cases we have circumscribed areas filled with ascitic fluid usually bounded above by adhesions between the cecum, colon, small intestines and omentum, and below by the pelvic organs together with a portion of the sigmoid flexure, also forming a mass of adhesions. The improvement under medical treatment continues to this point and then it ceases, and the patient becomes weaker and weaker and finally dies unless surgical treatment is instituted. It is not wise in these cases to remove the infected portions. If the abdominal cavity is simply opened and drained, the tuberculous tissue will be absorbed in about 50 per cent. of this class of cases. I recall some cases, which I reported recently, in which the pelvis was so completely filled with this tuberculous material that the condition seemed absolutely hopeless, and still simple drainage brought about recovery sufficient to make a subsequent normal pregnancy and childbirth possible. There are many other things of great practical importance I might mention, such as caseation of the tuberculous material and adhesions between loops of intestines. If these areas are disturbed during the operation intestinal fistulæ will follow, while if they are simply left to nature they are likely to clear up and leave nearly normal conditions. As to the after-treatment, I would say that the same principle applies to these patients who have recovered from tuberculous peritonitis that should be borne in mind in the after-treatment of patients who have recovered from localized tuberculosis in any other part of the body. Either the patient has swallowed tuberculous food or has tuberculosis of the lungs or he is living in unhygienic surroundings. In order to remove the possibility of reinfection, the conditions which existed primarily and were responsible for the original infection, should be removed. The patient should be placed in good hygienic surroundings. His diet should be properly chosen. He should receive tonic and antitubercular treatment for a considerable time after recovering from the tuberculous peritonitis.

Dr. Ernest Laplace, Philadelphia—The tubercle bacillus is an organism of low vitality but of remarkable persistence, and the reaction to its growth is a slow development of tissue. There are two kinds of tuberculosis: pure cultures of tuberculosis, and secondary infected areas of tuberculosis; and it matters much whether we are dealing with the pure condition or a contaminated one. As a result, typical cases of tuberculosis are almost always infected by other germs. Tuberculosis of itself tends to get well; we have this often exemplified especially in the lungs. The tubercle bacillus will die if you give it a slight incentive. Being a pure infection, it only asks a slight degree of irritation to absent itself and it is cured easily by adhesive inflammation. Take the laboratory view of these cases, for instance, the tubercle bacillus will die if the slightest abnormal conditions are applied to it. If you put it in a place where the alterations in temperature are extensive, it will surely die. All you need to do is to alter the nature of the soil in order to cure tuberculosis. Hence the counter irritation of the air, and the counter irritation of the operation, tend to destroy and cure the local tuberculosis.

Dr. A. H. Ferguson, Chicago—Out of 15 cases of tubercular peritonitis, where I opened the abdomen, 12 were benefited, 2 were cured, and 1 died under anesthetic. As to those that got better, one was a girl of fourteen years, with an enlarged liver and ascites. I suspected hydatids before I opened the abdomen. The liver surface was studded with tubercles, as were the bowels. I closed the abdomen and left the fluid there, the little girl making a beautiful recovery. She has since had four children and is in good health to day. The other case that I shall mention was just at the other end of tubercular disease. She had gone through all its stages which first involved the uterus and tubes and ovaries and these were removed. Tuberculosis of the intestines then followed and caused chronic obstruction of the bowels, which were found all matted together. I removed considerable of the small bowel and four or five inches of large bowel and made an end-to-end anastomosis of each. The woman made a perfect recovery, gaining over forty pounds and is in perfect health to-day. The first case was no doubt helped by the antiseptic quality of the blood itself. I agree with the opinions expressed by Dr. Weir.

Dr. Robert Reyburn, Washington, D. C.—I remember the case of a boy 17 years old who had tuberculosis of the right lung. Later he developed an inflammation of the peritoneum, and when I saw him he evidently had had an effusion into the peritoneum. Although I believe in doing very little in these cases, I decided to operate on him. I made a simple incision, washed out with a solution of boric acid and introduced a tube for twenty-four hours, withdrawing over two quarts of purulent material. The question is, how are these patients cured? It sometimes seems ridiculous that after simply opening the abdomen the patient is cured, but I believe it is due to the bactericidal power of the abdominal fluids. They seem to be able to take care of a moderate amount of poisonous products themselves. When we open the abdomen and wash out the abdominal cavity, the bactericidal power of the blood serum itself does the work and there are so many cases of this kind reported that it does seem to me to be one of the most admirable things in surgery.

Dr. Rufus B. Hall, Cincinnati—My experience does not correspond with some of the previous speakers in reference to patients suffering from chronic tuberculosis. In all these cases where we have a localized abscess, especially in the lower half of the abdomen and pelvis, or at least in a large percentage of them, the nidus of infection is in the Fallopian tube, while in a small percentage it is in the appendix. In all cases where the tube is the seat of abscess, I think the correct procedure is the removal of the tube and not drainage alone. My experience is that drainage is the correct treatment afterwards, but whether it should be vaginal or abdominal, must be settled in each individual case at the time. In all cases operated on where there is pus, I think it better to drain. My ultimate results have been much more favorable than Dr. Ferguson's. More than 50 per cent. of all cases operated on have recovered and have remained well long after the operation. Of course, some die following the operation and in others meningeal tuberculosis develops, but these are the exceptions. Some cases of acute peritoneal tuberculosis will recover without drainage, although drainage does not hurt them.

Dr. Richard H. Gibbons, Scranton, Pa.—To be successful in the management of these cases we must use internal medication, such as iodoform and iron; guiacol and ichthyol. I fully agree with Dr. Weir and the other gentlemen who believe that light and air are not especially the means of cure in these cases as long as there are other means of the operation to be considered. It is owing to the large increase in the amount of blood to the parts after they have been freed from adhesions, and particularly after any extensive surgical procedure, that we are able to do good for tuberculosis in the peritoneal cavity. Dr. Joseph Price explores the abdomen thoroughly in every surgical operation performed by him in these cases, with a view of discovering peritoneal tuberculosis, and his method is to go into the cavity, dealing with all foci of infection, exposing the mesentery on both sides in every case. After opening these up, by making a free incision, he packs the cavities with iodoform. Gauze, of course, is used and the abdomen is thoroughly washed out with hot water. The tubes, ovaries and appendix should be removed, I believe. This is the most successful way to deal with tubercular peritonitis. When we get an almost inoperable case, it may be well to desist from further active surgical interference than a mere opening, but I doubt it. Dr. Agnew used to order iodoform and iron, but Trousseau condemned iron in lung tuberculosis. I think iron combined with iodoform goes a long way towards the curative effect on these cases, and the carbonated creosote may have a very large contributory influence towards a cure.

Dr. Porter, in closing—From the tone of the discussion it would seem that I had advocated the therapeutic power of light and air to the exclusion of other things, but I distinctly did not do this. The point I wanted to make was this: it is not the trauma alone that does the good, nor is it alone the relief of pressure. It seems to me there is unquestionable evidence to prove that no one cause can be assigned to explain the cure which results after operation in tuberculosis of the peritoneum. The other point I wanted to make is that a careful study of the literature of the subject had convinced me that there are many elements entering into the cure of each case. To be wise and fair, we must attach importance to all the elements and use common sense, which really is the only thing that enters into the technic of all medicine and surgery. In support of what I did say in reference to light and air, I would mention that these conditions probably do more good than is often ascribed to them. Dr. Laplace says that, if you do not keep these bacteria in the dark they will die, but it does not hurt them to lie in the light and air. These cases get well, but not because of tuberculous inflammation, nor is it because they are enclosed within walls of fibrous material. I agree with Dr. Hall and should certainly drain whenever mixed infection is present. Tubercular germs are not pus-producing germs. If you have pus you must have something besides tuberculosis.

THE ADVANTAGES OF THE VAGINAL OPERATION IN OBESE PATIENTS.*

W. H. HUMISTON, M.D.
CLEVELAND, OHIO.

The assurance and skill which an operator acquires by following in any one condition a certain method of operation and technic might be commended, provided all his cases approach an ideal. However, this is far from any one's experience.

The popularity of the vaginal route for hysterectomy which is steadily growing among American surgeons has not reached its height with me. However, I do find in certain cases the method to be, if not ideal, at least expedient. I refer particularly to those cases in which excessive deposits of adipose tissue throughout the body are a sure indication of lowered vitality and lessened power of resistance to shock and to sepsis.

My early experience with this class of cases was very unhappy, and I have welcomed the simplification of the technic of vaginal hysterectomy by a bi-section of the uterus as a fortunate advance in modern surgery.

ADVANTAGES MENTIONED.

I wish merely to emphasize the value of the vaginal operation in those cases where general physical conditions would make one hesitate to advise an abdominal section, and will leave the discussion (so far as the local conditions obtains and the technic of the original method) to others.

1. The length of time in which the patient is being subjected during an operation should always be considered as a factor against the employment of the unessential elements of technic. The longer the time of operation the greater the depression, the larger the amount of anesthetic, the longer exposure, the more handling of parts which must necessarily give an increased reflex action occasioning shock.

2. In thick belly walls the difficulty in which the pelvic organs are brought into the wound necessitates more or less bruising of the wall—a source of danger to infection. The poor blood supply of fatty tissue is another element of risk in the proper repair of a wound.

The contra-indications to any vaginal procedure excepting merely for drainage of an abscess cavity is the presence of adhesions above the brim of the pelvis.

REPORT OF CASE.

In the case which I am about to report, however, the general condition of the patient was such that notwithstanding the evidences of adhesions outside of the pelvis, hysterectomy was performed by the vaginal route with a very satisfactory recovery, whereas the result, I am sure, would have been disastrous had an attempt been made to remove the diseased organs through an incision in the abdominal wall.

History.—Mrs. E. S., aged 33 years, married for the second time, three years previous. She had given birth to three children, of whom the youngest was 15 years old. She had had no miscarriage nor puerperal fever following any of her confinements. When 23 years of age, she had diphtheria, and at 30 a severe attack of smallpox, her first husband and children dying of the latter disease. The early menstrual history is negative. After the birth of her second child she suffered greatly at times with dysmenorrhea, flowing at irregular intervals and usually in profuse quantity. Five years ago she had severe hemorrhages from the uterus and was curetted. She was entirely relieved for some months but gradually the conditions returned and she has been practically flowing now more, now less ever since.

In June of 1901 she was again curetted with temporary relief; since this last curettement she suffered intensely at times and noticed that a swelling in the lower part of the abdomen which she first discovered in 1900 was steadily developing. This, upon examination, however, proved to be only adipose tissue in the belly wall. The uterus was greatly increased in size and immovably fixed in retroversion—large inflamatory masses were found in each lateral vault of the vagina.

Operation.—On Feb. 10, 1902, after curetting and thoroughly disinfecting the whole uterine cavity, I proceeded to the removal of the uterus and its diseased appendages by vaginal hysterectomy—bisecting the uterus and applying clamps to the broad ligament.

The walls of the uterus were much thickened and fibrous, and there were double tubo-ovarian cysts or old abscesses with exceedingly dense adhesions to adjacent structures. Fingers of omentum and a coil of intestine were freed and returned to the abdominal cavity and the pelvis and vagina were packed with sterile gauze.

Six drams of chloroform were administered for a few minutes short of one hour. The time required for the hysterectomy was 35 minutes.

The clamps were removed in 48 hours and the last of the gauze in the pelvis on the eighth day. The patient was out of bed on the 22d day following her operation. The vault of the vagina being perfectly closed and seemingly firm.

This patient, whose height was 5 feet, 7 inches, weighed 281 pounds. She was extremely anemic and cachectic with a pulse of small volume, low tension, irregular and arrhythmic and averaging about 110 per minute.

At no time following the operation did I feel a bit anxious as to the outcome, and yet never did I have so unpromising a case.

DISCUSSION.

Dr. C. O. Thienhaus, *Milwaukee*—I am always in favor of the vaginal route because of the immediate and remote advantages of this route for the patient, not always for the surgeon, and am of the opinion that, what we can operate on by this route should be operated on by this route. What experts in this line of work are able to perform is shown, for instance, by the statistics of Duehrssen, who operated on thirty-six cases of extrauterine pregnancies ruptured and unruptured by vaginal anterior celiotomy without a death. He advocates this method for every case of extrauterine pregnancy up to the third month. Statistics of others show the same good results. Naturally, the individuality of the surgeon and the experience in this line of work plays a great rôle. Dr. Goldspohn challenged me the other day to show him the literature where Duehrssen cites only 2 per cent. of recurrences with his method of vaginal suspension. This is cited, as will be stated in my paper the day after to-morrow, in Duehrssen Zeile: 20 photographic plates for illustration of gynecologic operations, in special conservative colpo-celiotomy, Berlin, 1902, Kargers Verlag, page 17.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

Dr. J. H. Carstens, Detroit—I want to say, in defense of American operators, that we can show men here in this country who had thirty, forty and sixty cases without a death and they operated by the abdominal route.

Dr. J. Wesley Bovée, Washington, D. C.—I agree thoroughly with the author of this paper. I believe that the vaginal route is the proper route for this kind of work. It is the route for carcinoma when we intend to do a radical operation in but rare cases. In ruptured tubal pregnancy it is really a toss-up whether it is the preferable route or not. If adhesions, which are beneficial, in these cases, are present, and an accumulation of blood, etc., way down in the pelvis, we can take it out in this way, but if we have rupture with much blood in the peritoneal cavity, or perhaps a living fetus, with the sac, then the vaginal route is out of place, and the abdominal route is the only one to use. I had a case recently of ruptured tube, with a three and a half months' live fetus, much blood in the abdominal cavity, which I could not have discovered if I had gone through the vagina. We must not forget that there is a pelvic brim, and work above it can not be done through the vagina.

Dr. Seth C. Gordon, Portland, Me.—I do not believe Dr. Humiston voices the sentiment of the gynecologists of this country when he says that operations by vagina are increasing. I believe they are decreasing and very rapidly, too. The case he cited was one strictly for the vaginal operation, and I make this emphatic because I am satisfied that if I had adopted the same route in a similar case, I would have saved my patient.

Dr. Charles P. Noble, Philadelphia—I agree with Dr. Humiston that in fat patients the abdominal route presents many difficulties, but I do not believe for one moment that vaginal hysterectomy is on the increase, either in this country or in any other country. Some years ago Dr. Jacobs of Belgium came over here to teach us to do vaginal hysterectomy. He saw what good work was being done with the abdominal route and he is now the leading abdominal operator in Belgium. The same thing is true of Segond of Paris. So far as cancer is concerned, there is great reaction in Europe for the abdominal route.

As to the relative merits of these operations in extrauterine pregnancy, I have done about seventy-five typical operations and have had one death. This patient had both phthisis and nephritis. Of four cases I operated on from below, two had to be reoperated on from above. In one hydrosalpinx developed and in the other a tubal mole developed. One of our members had hemorrhage a number of times and had to go in from above, after having started from below. We are not going to gain anything by giving up the good thing we have in the abdominal operation for the uncertainty of the vaginal route.

Dr. Humiston, in closing—A few years ago I did nothing but the abdominal operation, and I considered I had a low mortality, but since I carefully selected the route applicable to each case, my mortality is still less. I make one vaginal hysterectomy where I make six abdominal hysterectomies. Judgment should be displayed in each case. I have not as yet lost a case of extrauterine pregnancy, and I have operated on every one from above. When the patient was in profound shock, I would resort to saline infusion the moment the anesthetic was started, and I have a *nil* mortality in extrauterine cases. Some of the histories of these cases are almost beyond belief. I have operated when the patient was pulseless, temperature as low as 94.5. Saline infusion was started the moment the operation began, the abdomen was opened rapidly, without waiting to clear away clots, but I put on the clamp, and when the operation was completed the patient was taken off the table with a pulse. You must individualize your cases, and sometimes you will do an occasional vaginal operation, but in the majority of cases your operation will be abdominal.

POST-OPERATIVE INTESTINAL PARESIS.*

FREDERICK HOLME WIGGIN, M.D.
NEW YORK CITY.

The convalescence of a person at the present time on whom an intra-abdominal operation has been performed is usually so peaceful a period that it is often hard to realize the grave dangers which surround the patient and which are liable suddenly to obtrude themselves and change the scene into a stormy and anxious one. Hence, the post-operative responsibility of the physician is great, for the safety of the patient depends on his ability to quickly recognize and successfully treat these complicating conditions as they arise. Of these complications the most frequent and probably the one least often recognized in its initial stage, when it is readily controlled and a fatal outcome avoided, is that form of intestinal obstruction due to failure of the muscular fibers of the intestines to contract, giving rise to an accumulation of the bowel contents in the paralyzed portions of the gut.

ETIOLOGY.

The trouble usually arises from injury of the intestinal nerve supply in the course of an intra-abdominal operation, and is especially liable to occur if the operation is prolonged and rendered difficult by reason of the distention of the bowel with gas. It is probable that the rapid and excessive development of gas which often follows laparotomy is due to defective or deranged innervation, as has been pointed out by Mr. J. W. Malcolm of London, rather than to fermentative and putrefactive processes, although these may be important factors in the production of the trouble. Adenot says that in a certain number of these cases the chief difficulty is due to pressure upon the left subcostal angle of the colon by the distended coils of small intestines; peritonitis and enteritis-thrombosis and embolism of branches of the mesenteric arteries or veins may also give rise to it.

SYMPTOMATOLOGY.

When the trouble is due to trauma of the intestinal nerves it first manifests itself by the continuance of the nausea which usually follows the administration of the anesthetic, therefore, if no morphia has been administered to the patient following the operation, and eighteen hours have elapsed since its conclusion, and she is more or less nauseated, having no desire for nourishment, or is regurgitating a quantity of straw-colored liquid from time to time, has passed no gas from the anus, is slightly tympanitic, the pulse rate weak and increasing in frequency, the bodily temperature slightly elevated while the respirations are normal, there is good reason for believing that the patient is suffering from intestinal paresis. If the course of the disease is not interfered with, the vomiting becomes more frequent, the amount of liquid ejected larger in quantity, its color gradually darkening till it finally becomes black, its odor seldom, however, becoming fecal in character; meanwhile the intestinal distention continues to increase, the pulse rate to rise and to lose in force, the body temperature slowly rising, while the respirations slightly increase in frequency. The course of the disease is rapid, a fatal termination usually being reached within forty-eight hours of the onset.

DIAGNOSIS.

From peritonitis the disorder may be differentiated by its earlier onset, by the character of the pulse, the frequency of the respiration and by the absence of pain and rigidity of the abdominal muscles. From intestinal obstruction due to adhesions or bands by its earlier onset, less urgent symptoms, the absence of pain and of peristalsis of the bowels above the site of the obstruction. When the disorder is due to a mesenteric thrombus or embolus, the symptoms are more acute in character and there is a history of feeble health and diseased arteries.

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TREATMENT.

The occurrence of post-operative intestinal paresis can be usually prevented by the careful preparation of the patient for the operation when the condition for which it is to be undertaken is more or less chronic in character, by the regulation of the patient's diet, the proper use of cathartic medicines and the flushing out of the colon with saline solution. In those cases that are acute in character and where there is no time for this preparatory treatment, much can be done to lessen the danger of the occurrence of the trouble by washing out the patient's stomach directly after the performance of the operation before consciousness is recovered, and leaving in the organ four or five ounces of saturated solution of magnesium sulphate. The passing of a short rubber tube into the rectum at intervals of six hours, followed, after a little time has elapsed to allow of the escape of gas, by the injection into the bowel of a pint of hot saline solution, also tends to prevent the occurrence of the disorder under consideration, as it diminishes the danger of the accumulation of gas in the intestinal tract.

The initial symptoms of intestinal paresis having been recognized a seidlitz powder administered in the following manner will often end the difficulty and start the patient on the road to recovery: The contents of the blue paper having been dissolved in a tumbler nearly full of water, the contents of the white paper is dropped upon the surface of the solution at the time the patient is ready to drink it, a warning having first been given of the importance of retaining the liquid. The advantage gained by the administration of the powder in the above described manner is that the acid dissolves slowly, maintaining its agreeable taste till it is swallowed, and also that some of the gas being generated in the stomach exerts a counter pressure on the intestinal contents and thus helps to overcome the existing reversed peristaltic current and to start it once more away from the stomach and towards the anus.

The physician should personally superintend the administration of the remedy and remain with the patient until the bowels act, for the time is a critical one, and in a few hours the patient will either pass safely out of the threatened danger or be beyond hope of recovery. If the saline is retained by the patient an hour and a half later a tumbler full of hot peptonized milk will often cause the bowles to act freely, and when this occurs all danger is usually over and the patient ceases to regurgitate the stomach contents, passes gas by the bowel, and in a few hours is ready to take eight ounces of peptonized milk every three hours. Should the patient reject the saline, the writer has found it advantageous to administer a second powder within fifteen minutes, or while the patient is somewhat exhausted by the act of rejecting the first, the importance of retaining the solution being explained again to the patient, who often must be ordered in rather an imperative manner to endeavor to retain it. The second effort is usually successful, provided the condition has been promptly recognized and treatment instituted. When more time has elapsed and the tympanitic distention is greater, the patient being unable to retain any liquid in the stomach, the writer has still been able to rescue patients from their perilous condition by passing a tube into the stomach, emptying it of its contents and, after allowing as much gas to escape as would, to wash out the viscus with normal salt solution, and to place in it before withdrawing the tube four or five ounces of saturated solution of magnesium sulphate. While the treatment herein described is being carried out, strychnia in 1/30 gr. doses may advantageously be administered hypodermatically from time to time, provided it has not been previously employed in too large doses. Hypodermatic injection of atropin in 1/60 to 1/20 gr. doses have also been found useful, and C. von Noorden has used physostigmin in doses of $\frac{1}{2}$ to $\frac{3}{4}$ of a milligram with good results in overcoming the tympanities in the same condition.

Since the writer has learned to correctly interpret the meaning of the early symptoms accompanying post-operative intestinal paresis, and to appreciate their importance, there has been little difficulty in arresting the progress of the disorder by means of the treatment just outlined and of lowering a mortality rate following the performance of intra-abdominal operations in chronic cases from 10 per cent. to less than 1 per cent.

PROPHYLAXIS.

The important points for the physician to bear in mind who is called on to care for a patient who has undergone an intra-abdominal operation, if he would carry his patient safely through the convalescent period, is to abstain from using morphia, and, if the patient is restless and a narcotic drug seems necessary, to use atropia; to remember to watch the patient carefully during the first twenty-four hours, and that when she regurgitates liquid or is nauseated or even disinclined to take nourishment eighteen hours after operation, is slightly tympanitic and has passed no gas or fecal matter from the bowel, he must at once institute active measures for the sufferer's relief, and that if his diagnosis is correct his efforts will be promptly crowned with success, and in a few hours the patient will be out of all danger of an untimely end.

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55 West Thirty-sixth Street.

DISCUSSION.

Dr. Henry O. Marcy, Boston—I rise to emphasize this paper with my distinct approval. I have practiced its teachings satisfactorily for many years, and am glad the Doctor has brought this subject up for our consideration.

Dr. Daniel T. Nelson, Chicago—I have stood over these patients a number of times and appreciate the anxiety of the surgeon. I have practiced this treatment in a modified way, using the sulphate of magnesia in bulk instead of as described Dr. Wiggin. I have been in the habit for many years of using calomel first or along with it, in divided or full doses. I began with five or ten grains in a single dose, and if the patient vomited this I repeated it. I believe now that I get just as much effect from one grain given in five or ten doses as one grain given five times or in one dose. I follow the calomel with the saline. As to the general treatment of the patient, I only wish to emphasize what he has said. I believe strychnin is our sheet anchor, which he has advocated so well.

Dr. George H. Noble, Atlanta, Ga.—I will add a few words only in outlining my treatment. The patient is prepared as usual and the anesthesia is begun with nitrous oxid, followed by ether. With this method there is very much less nausea, as less ether is absorbed. I frequently operate with less than a hundred-gram can of ether. I also make it an invariable rule to wash out the stomach after administering an anesthetic to remove the mucus which has been saturated with the anesthetic. They are then put to bed and given saline solutions or stimulants they need by rectum and when necessary hypodermic medication. It is very rare that my cases are troubled with nausea and, if persistent vomiting occurs, I become apprehensive of additional causes. Dilated stomach, diseased kidney and bad hearts are contributing causes and each requires special attention. The stomach should be left absolutely empty and early evacuation of bowels encouraged. An enema of alum water is a valuable remedy. In persistent nausea from almost any cause, evacuation of the lower bowel often gives relief. The alum water was introduced by Dr. Hardon of Atlanta. He said he knew it produced vomiting when given per stomach, and supposed it would act equally as well through the rectum. He gives about one ounce in a quart of water. Now it is a standing rule with me to give this enema whenever there is any gas, colicky pain or persistent sick stomach. One or two injections give relief for three to six hours; then when the stomach becomes quiet it is my custom to administer the old compound cathartic pill. So many patients have vomited themselves so nearly to death with salts that I quit using them long ago. Two of these pills should be powdered and put in a capsule. In severe cases I give four and sometimes repeat them four, six to twelve hours. They retain these pills better than calomel, and get excellent results.

The fact that stomach lavage frequently relieves nausea, vomiting and spitting-up of contents of stomach, shows that many of the supposed cases of paresis are misjudged. It is *functional disturbance of the stomach, for if it were paresis* of intestines the mere removal of stomach contents would produce no effect, and nothing but evacuation of the bowels would give relief. It is likely due to infection (more or less limited) and too much handling and exposure of the intestines. On the other hand, the condition of the stomach mentioned can almost always be prevented by simple but careful preparation of the patient beforehand and avoidance of meddlesomeness afterwards.

Dr. H. D. Ingraham, Buffalo, N. Y.—I would like to ask the essayist if he has ever had any experience with paresis of the intestines due to fermentation of food and, if so, what he has done to relieve it. I have seen it occur even when every precaution was taken, both before and after operation.

Dr. Charles L. Bonifield, Cincinnati—Two or three years ago I read a paper on this subject, and I have not had occasion to change my views since then. I recommended the use of physostigmin, founding my belief in its value on its well-known use by veterinary surgeons in horse colic. I have used it in a number of cases, but am not sure whether I really got any marked results from it. As to the cause of this condition, I thoroughly believe that in the majority of cases it is sepsis, to a greater or less extent. Dr. Wiggin has tried to differentiate between septic peritonitis and intestinal paresis, but I think that a certain amount of sepsis is at the bottom of most of these cases. Next to sepsis, the most frequent cause is exposure of the bowel during the operation. For this reason I think it important during abdominal operations that the intestines be well protected by warm sponges.

As to the cleansing of the intestinal tract immediately before operation, I think there is a decided disadvantage in using salines of any kind. They produce watery stools, but do not remove all the contents of the bowel, especially if the patient is inclined to be constipated, when there is an accumulation in the cecum. Salines also abstract water from the system and leave the patient in a much worse condition to stand the operative shock than if some other purgative is used. I have for years prescribed the compound extract of colocynth, combining it with atropin or hyoscyamus to prevent griping. I instruct the patient to drink freely of water for two or three days before operation, so as to prepare her for the loss of some of her body fluid. Aside from purgatives, strychnin is the most valuable drug we have in the after-treatment of these patients. It is a stimulant to the nervous system, the heart and the muscular coat of the intestines. I have found it advisable when purgatives have failed to act after a thorough trial and when rectal injections also failed to secure a movement of the bowels, to stop all efforts in this direction and endeavor to stimulate and sustain the patient by hot liquid food by the stomach and stimulants hypodermically. I have not infrequently seen beef tea under these conditions stimulate peristalsis when purgatives have failed to do so. The stomach should be washed out before food is given.

Dr. Wiggin, in closing—I agree with Dr. Noble that the compound cathartic pill is one of the best remedies at our disposal with which to unload the intestinal tract, but I did not discuss the preparatory treatment of the patient for operation in my paper. I do not favor the excessive use of either salines or cathartics in getting the patient ready for operation: and I generally aim to have the patient under my care for at least a week before the operation, so that I can repeatedly wash out the colon with saline solution and can use cathartic pills or small repeated doses of calomel followed by a saline, and then have two or three days' interval before the operation so as to have the patient thoroughly rested and the system well charged with water.

In regard to the pathology of intestinal paresis: that the condition is not due to sepsis is conclusively shown by the fact that if the disorder is recognized in its early stages and proper treatment instituted, all the symptoms to which it gives rise disappear as soon as the patient's bowels move. My personal experience also seems to show that the cause of the trouble under discussion is due to injury of the intestinal nerve supply and not to sepsis, for the following reason, namely, many of my earlier cases of abdominal section terminated fatally from what was supposed to be at the time peritonitis; on opening the abdomen, postmortem, no evidence of sepsis or peritonitis was discovered and further, when later on in similar cases the abdomen was opened, antemortem, no evidence of sepsis or peritonitis was found. On puncturing the intestines at various points to allow the large volume of gas contained in them to escape, it failed to do so. My attention was long since gradually called to this class of cases from the opportunity which I had of watching two classes of patients upon whom laparotomies were performed. The first were acute conditions requiring immediate operation; the second was for chronic conditions which admitted of careful preparation of the patient for the operation, and the convalescence of the last-named class was so much smoother and quieter than in the first class, even though the operation was of greater severity. My attention was also attracted by these cases of intestinal paresis by the fact that at one of the hospitals to which I was attached, my assistants were changed in the regular routine of the hospital, every six weeks, and I found that when the laparotomy was performed on the patient twenty-four to thirty-six hours before this change occurred that the patient almost invariably died, while from the same class of operations at other periods of the interne service, the patient almost as surely recovered. Careful investigation of the matter revealed the fact that the patients who died at this time of change of assistants had not been carefully looked after and that when nauseated eighteen hours or so after the operation had not been given the usual treatment. Five or six years ago when I had begun to recognize the meaning of the symptoms of intestinal paresis, I had in my ward two patients suffering from the severe form of the trouble; they were both unable to retain the seidlitz powder solution although it had been repeatedly given to them, and realizing the desperate plight of the patients I felt justified in one case in pursuing the following treatment: I washed out her stomach through a tube with saline solution, a great quantity of gas escaping at the time; when the fluid came away clear and no more gas would escape, I left in the stomach four ounces of saturated solution of sulphate of magnesia. Five hours later her bowels moved and her further convalescence was uneventful. This procedure was unfortunately not followed in the case of the other patient, who was simply stimulated and made comfortable. This patient died twelve hours later. During the time that has elapsed since these patients were treated, intestinal paresis as a factor in the mortality of the patients upon whom I have performed abdominal operations has disappeared. It is not at all difficult to differentiate between the nausea following the administration of an anesthetic and this condition. In private practice in New York we induce the anesthetic state first with nitrous oxid, following this with ether, seldom using more than three or four ounces of ether for an operation lasting one hour, and seldom exceeding six ounces when the operation lasts for two hours, with an expert anesthetist. Using a closed inhaler it seldom requires a larger quantity of ether for the time mentioned, than when no gas is used. As a rule, little or no nausea follows, but here is the point: The vomiting which follows the administration of an anesthetic is preceded by distinct distress and nausea, whereas in intestinal paresis the contents of the stomach is ejected from the mouth without force and is not preceded by nausea or colicky pain. If the operation has been difficult and prolonged and the intestines are handled considerable, there will often be found eighteen or twenty hours after the operation that the patient has no desire for liquids, and that she is spitting up or regurgitating fluid which is at first white, then yellow, and which gradually becomes darker in color until it is nearly black, the diagnosis becoming graver as the color of the ejected fluid darkens. If no treatment is instituted in six or seven hours from the beginning of the trouble—or in twenty-four hours after the operation—the patient will ordinarily be in a hopeless condition and beyond the aid of treatment. My experience in the treatment of the condition under consideration has seemed to prove that the best remedy in the early stage of the disorder is the administration of a seidlitz powder, as described in my paper; the contents of the blue paper being dissolved in a tumbler nearly full of water, and the contents of the white paper being dropped on the surface of the solution just at the moment that the patient is ready to drink it. Therefore, if eighteen or twenty hours after the operation I find my patient unwilling to take liquid nourishment or water, I at once give the seidlitz powder; if this is retained, an hour or an hour and a half later I give the patient a tumbler of hot peptonized milk, following this the bowels usually act quickly, and the following convalescence of the patient is uneventful. I have had no experience with distention of the intestines coming on ten days or so after the operation.

I do not believe in over-medication, or the excessive use of cathartics. But I do believe fully in the necessity of the careful preparation of the patient for the operation whenever it is practicable, and that this preparatory treatment has much to do with the low rate of mortality—a fraction of 1 per cent., I believe—which has followed my operative work in the abdominal cavity for chronic conditions, for a number of years past.

THE INFLUENCE OF BILIARY ACIDS ON SURFACE TENSION.

A PRELIMINARY REPORT FROM THE CLINICAL LABORATORY OF THE DENVER AND GROSS COLLEGE OF MEDICINE.*

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DENVER.

Hippocrates noticed that when vomited matter comes in contact with marble it effervesces. It took more than twenty centuries to find the explanation of this phenomenon—namely, that marble, calcium carbonate, an alkali, dissolves with effervescence in stomach contents containing an acid.

We wonder how such an acute observation of a master mind could have lain dormant so long, and had to be rediscovered. In order to keep up our dignity we plead that we are not to blame for this oversight; forsooth, Hippocrates recorded his observations in Greek, and did not provide his works with a comprehensive index. What excuse, however, can we plead in the following case, not a hypothetical one? Here is a book written in the English language, used as a text-book in hundreds of medical colleges in England and the United States, studied by thousands of students during the last two decades, and this text-book records in clear and unmistakable terms, a remarkable observation, which nevertheless has escaped the attention of the professors, students and the medical profession at large, and which had to be brought to our cognition through the medium of the French language, only about a year ago! Let me relate this case of literary amblyopia:

Two papers appeared in the *Journal de Physiologie et de Pathologie General,* in 1901 (tome iii, pp. 99, 151; ibid., p. 461), by Frenkel and Cluzet, and Chauffard and Gouraud respectively, in which a new test for bile acids in urine is described. The discoverer of the test is supposed to be a man named Haycraft. The test is a simple one. It consists in sprinkling flowers of sulphur on urine, and if it contains bile the sulphur will sink to the bottom. This phenomenon attracted a great deal of attention, and the question naturally arose: Who is Haycraft? It took about one year to find out that Haycraft was a myth and that the author of the observation is Matthew Hay, professor of legal medicine in Aberdeen, and furthermore, that this observation is recorded as a private communication on page 294, in the "Text-Book on Human Physiology," by Landois and Stirling, second edition published by Blakiston's Son & Co., 1886, and in a somewhat abbreviated form in all subsequent editions. Thus it will be seen that an observation made by an Englishman, and recorded in a text-book that was before the medical profession for sixteen years, had to come back to us percolated through the French language and in the form of a stunning discovery of a man named Hayseed or Haycraft. Who knows how many more valuable observations are contained in our text-books which we know not? Verily, we have eyes and see not.

From the time I learned of this test from an abstract in the *Progres Medicale,* about a year ago, I have made numerous experiments on urine, and have applied this test to the study of bile acids in feces and stomach contents. The more I study this phenomenon the more wonderful and inexplicable it appears to me. A pinch of flowers of sulphur thrown on water or bile-free urine will float for weeks on the surface. On the addition, however, of one drop of bile to a quart of water the sulphur will at once sink to the bottom. We are all so accustomed to the wonderful play of colors in our various qualitative analyses that we no longer stop to marvel at them, but this test is so different in its nature from all other known modes of analytical procedures, and its sensitiveness is so extraordinarily great, that it almost borders on the miraculous.

Permit me to present a summary of the investigation with this test. Professor Hay found:

1. The test is based on the law of surface tension.*

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* Read before the Thirty-second Annual Convention of the Colorado State Medical Society, at Pueblo, June 24-26, 1902.

* The tension of a liquid by virtue of which it acts as an elastic enveloping membrane, tending always to contract to the minimum area. It is due to the fact that while molecules in the interior are attracted in all directions, and are thus in equilibrium, those on the surface have no neighbors outside to balance the attraction of those within and are consequently acted on by a

2. The reaction is due to the presence of bile acids and not to any other constituent of the bile.

3. One part of glycocholic or taurcholic acid in 120,000 parts of water lowers the surface tension of the water and sulphur will sink to the bottom.

4. No other substance in the body except soap has the same action as bile acids.

Since the original papers in the French journal referred to above are not accessible to me, I am obliged to draw on the editorial in The Journal of the American Medical Association (March 23, 1901, p. 820) for information relative to their investigation.

1. Acetic acid, alcohol, ether, chloroform, essence of turpentine, benzoin and its derivatives, phenol and its derivatives and analin also cause the sulphur to precipitate.

2. *All fluids with a surface tension greater than fifty* dynes per centimeter do not allow sulphur to fall, and in all fluids with a tension less than fifty dynes the sulphur rapidly settles.

3. Lycopodium bears the same relation to fluids with a tension of thirty dynes as flowers of sulphur to fluids with a tension of fifty dynes.

In my own experiments I have noted the following:

1. The specific gravity of the fluid has no influence on the accuracy of the test.

2. The reaction of the fluid has no effect on the test.

3. In order to obtain correct results, the fluid must be clear. Cloudy or turbid urine must be filtered.

4. The urine must be free from bubbles.

5. Urine examined immediately after it is voided gives invariably the reaction for bile. This was a source of great annoyance to me until I found out that heat reduces surface tension. The urine must, therefore, be cooled off before the test is made.

6. In several cases where the reaction for bile pigment by Gmelin's test could not be obtained; the presence of bile acids could be demonstrated by the sulphur test.

7. In a case of syphilis of the liver, the urine gave the reaction for bile acids.

8. The urine of several patients in advanced stage of tuberculosis, with swelling of the lower extremities, gave the reaction for bile acids.

9. The stomach contents of a patient which I removed on two consecutive mornings, and which consisted almost entirely of bile, did not give the sulphur reaction.

10. Urine of three cases of pregnancy in their sixth, eighth and ninth months, respectively, gave the bile acid reaction.

11. After having experimented with more than one hundred and fifty different powders, I have found that boracic acid, iodoform, acetanilid, salol, calomel, salicylate of bismuth and salicylic acid possess this property as does sulphur, only in a feebler degree.

I shall not theorize as to the probable effect bile acids have on digestion by virtue of their ability to lower surface tension. I have not reached yet the point in my experimentation that will warrant the making of any positive assertion. I wish merely to call your attention to a new test for bile acids, the simplicity, accuracy and sensitiveness of which should gain for it universal application, and induce others to further investigation.

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resultant force tending toward the interior. Surface tension is based on the law of capillarity, and those who wish to study the subject should consult the exhaustive bibliography and synoptical study, "References to Capillarity to the End of the Year 1900," by John Uri Lloyd and Sigmund Waldbott, Bulletin of the Lloyd Library, Pharmacy Series No. 1, 1902.

Clinical Report.

A CASE OF VICARIOUS MENSTRUATION FROM THE LOWER LIDS.

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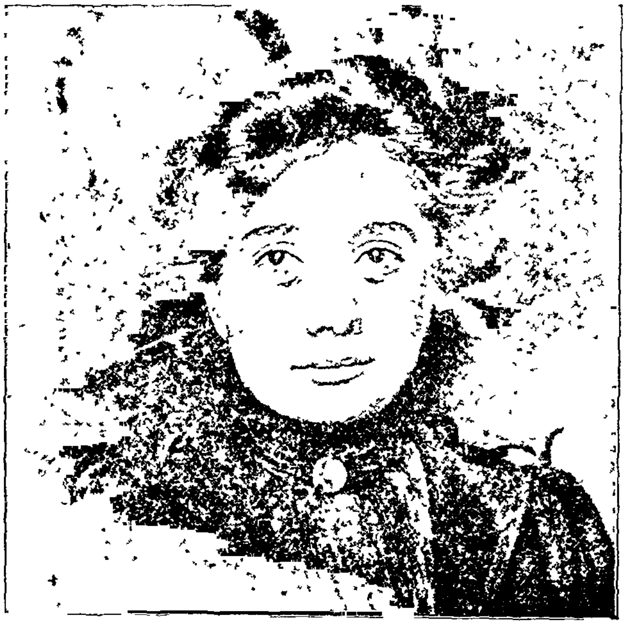
A young Jewish girl of 16 presented herself at the Vanderbilt Clinic on account of hemorrhagic spots under each eye. She was pale, flabby and badly nourished. In other respects she was well. She had menstruated for the first time at 13 years of age. Since the establishment of her menses she noticed every month, two or three days before her period, that a red spot would appear under each eye. The skin would become red, the blood would rise to the surface and finally ooze through and form a clot, which dried, resulting in a crust. This lasted during her period and disappeared gradually, so that in two or three days afterward the skin would be normal again. She also said the spots would occasionally appear two or three days after her menses and would disappear as usual.

There was a hypermetropia of a mild degree with normal vision. The interior of the eyes and the lids were normal and she did not complain of any visual disturbance. There was atrophic rhinitis with deflected septum. Dr. E. B. Coburn examined her blood and found the blood count very near to the normal, although there was a diminished quantity of hemoglobin.



The bichlorid of mercury with the compound tincture of gentian was given in this case. Her general health was much improved in consequence without the above mentioned phenomena being in any way influenced. The accompanying photograph illustrates the condition. As a rule the spots are semilunar in shape, about three-quarters of an inch below the level of the inner canthus and one-third as long as the lower lid. Dr. Geo. B. McAuliffe has referred to a case similar to this in a review on ophthalmology, published in *The Critic*, but without details. On request Dr. McAuliffe was unable to give me reference to the publication in which the case was described. I have been unable to find any other similar case on record.

39 West 36th Street.

Epidemic Infantile Paralysis.—Something not yet understood by medical science is the occasional development of an epidemic of infantile paralysis. Such an instance lately happened in Gloucester, Mass., thirty-eight cases being noted within a radius of four miles.

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THEORY AND OBSERVATION IN MEDICINE.

The medical literature of this country, and for that matter of other countries also, consists of both the chaff and the wheat. Much of what is written is a mere repetition of previous work, much is pure speculation and the application of writers' theories and fads to medical subjects. A certain proportion only consists of original observations, and it is from this that our modicum of progress every year in medicine comes. This state of affairs would be discouraging, only that it is not true in medicine alone. In every science there is the complaint of the amount of writing done for the little advance gained. In every field of thought supposedly brilliant theories usurp the place of patient investigation. Any number of mare's nests are found and exploited every year. Hence despite the acknowledged value of scientific investigation, the popularity of the expression used by Amiel in the *Journal Intime:* "Science is a lucid madness occupied in tabulating its own hallucinations."

Theories fall and others rise perennially to take their places. The most striking feature in the history of medicine is the successive adoption of ever new hypotheses to accord with the scientific fad that is most prominent at the moment. Just a century ago almost to the year the great French physicist and physician Cabanis said in a review of the medical theories of his time that "every age has its peculiar taste and fashion. At different periods medicine has assumed the tone of the prevailing sciences. It has even endeavored to speak their language and to subject itself to the same rules so that it has passed successively through all the different systems that have acquired any degree of celebrity in the world."[1]

Cabanis' declaration is literally true. After Newton's discovery there was a iatro-mathematical period in medicine, especially noteworthy in England, when the reduction of therapeutics to an exact science through mathematical principles was the constant effort of the theorist. When Leibnitz ruled the world of European thought there was a period of iatro-philosophic speculation when metaphysics seemed to promise much for medicine. After the rising science of chemistry began to make itself felt, all vital reactions were explained on chemical grounds and the horizon of medicine seemed surely bounded by chemical principles. On the other hand, when physics began their notable evolution at the beginning of the present century, mechanical theories of life became predominant and therapeutics took on a physical character. It is not surprising, then, to find that the marvelous development of electricity and the successful elucidation of the chemistry of the carbon compounds should give us in our day a crop of theories as to life and health, each with a modicum of truth perhaps, but advanced as if they represented the whole field of vital activity and pointed to the only methods proper for the correction of its faults. It would not be surprising either to find that these theories so elaborately evolved would prove of as little practical value as have so many other medical echoes of current scientific thought in the history of medicine.

As a matter of fact the great mass of theorists in medicine have done little for science, but act as a brake on the wheels of progress. A distinguished medical professor of Bologna, when he heard that Harvey advanced as a proof of the circulation of the blood the fact that one could hear the heart beat, is said to have said: "Harvey may hear the heart beat in London, but we do not in Bologna." Engaged in his theoretic speculations he never even took the trouble to listen. When Auenbrugger made his demonstration of the value of percussion he practically dedicated his little book on the subject, the first important contribution to the modern science of diagnosis, to his master, Van Swieten, the head of the medical clinic in Vienna. Van Swieten wrote ten volumes of commentaries on medical subjects, two of them mainly concerned with thoracic disease, without even deigning to mention the great work of his pupil. Laennec fared some better, but received not nearly the honor that went to his contemporary Broussais the theorist, whose work, though not without its merits in a certain way, probably did more harm than good. Even in our own time Koch received all the honor at the Tenth International Medical Congress in Berlin, in 1891, while Ramon y Cajal, who brought with him to the congress his original demonstrations in brain anatomy that have since made him so famous, attracted no attention outside a narrow circle of nerve specialists.

It would be a priceless boon to medicine if the lesson could be learned that not brilliant speculation nor theories, however suggestive they may seem, are so much wanted as patient, painstaking observation. There are any number of subjects in which discoveries lie almost invitingly ready to be made. Within a few years a hospital interne, Dr. Head, has given us one of the most important series of clinical observations made in a half century by a careful investigation of the superficial skin areas that are affected sympathetically when pathological conditions develop in internal organs. Opportunities for original work are not lacking for those who seek them. Expensive laboratory equipments are by no means necessary. A wise German physician said not long ago: "The gun does not make the marksman, nor the laboratory the investigator." What is needed is patience and good will with the perseverance to follow up a subject until legitimate, practical conclusions are reached.

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[1] Sketch of the Revolutions of Medical Science and Views Relating to Its Reform, by J. G. Cabanis, Member of the National Institute of France. London, Murray, 1806.

THE PATHOGENESIS OF CHOREA.

Although the bacteriologic proof is wanting, there is clinical evidence in favor of the infectious character of chorea. The mode of invasion of the disease, its seasonal prevalence, its self-limitation, its liability to recurrence, its occasional fatal termination, the endocardial and articular complications or associations, the postmortem findings in some cases, all point in this direction. It is true that in a number of cases lesions, sometimes macroscopic, at other times microscopic, have been found in brain and cord, but their exact relation to the clinical manifestations has not been entirely clear, while the results of such bacteriologic examinations as have been made are lacking in uniformity. Thus, certain bodies thought to be characteristic have been described as present in the central nervous system. Again, emboli have been supposed to result from the endocarditis and give rise to softening in the brain and spinal cord. Further, changes have been found especially in the ganglion cells of the cerebral cortex and considered as responsible for the symptoms.

To the inconsiderable number of fatal cases of chorea in which careful postmortem study has been made, Dr. M. Reichardt[1] adds two more. One of these occurred in a maid servant, 17 years old, who in the third week of an attack of articular rheumatism exhibited choreic movements and mental depression. The heart was enlarged to the right and a faint, soft systolic murmur was audible. Mental confusion developed suddenly, with restlessness, hallucinations and fear. The temperature rose and a state of fear set in, followed by complete loss of consciousness and death. The second case occurred in a girl, 15 years old, who had had a previous attack of chorea but a few months before. The movements were violent, the temperature was elevated and pulse and respiration were accelerated. The heart was enlarged and a loud, blowing systolic murmur was audible at the apex. The patient grew progressively worse and death took place suddenly and unexpectedly on the sixth day of the disease.

In both cases there were found on histologic study inflammation, hemorrhage and degeneration of nerve fibers in the central nervous system. The inflammatory process had involved the larger portion of the brain in varying degree, though not exceeding certain moderate limits, so that with a single exception macroscopic foci were not visible. In the one case the region of the central gray matter of the aqueduct of Sylvius and the left optic thalamus was the seat of marked disease and contained hemorrhagic inflammatory foci; and in the other the subcortical white layer was involved, with entire freedom of the basal ganglia. The ganglion cells everywhere were least affected and exhibited no definite change. The numerous hemorrhages, in part visible macroscopically, apparently distributed indiscriminately, were present throughout the brain, but accumulated especially in the situations presenting marked inflammation and also in the central gray matter and in the white matter beneath the ependyma of the ventricles. The fatty degeneration of the nerve fibers was in seat independent of the inflammatory process. It was wanting in the central convolutions and in large part in the internal capsules, but was present, in part in marked degree, in the optic thalamus, the posterior segment of the internal capsule and the transverse fibers of the knee of the capsule, as well as in the lateral white matter of the pulvinar. In the spinal cord the root fibers principally, as well as fibers in the anterior and lateral horns and isolated fibers in the posterior columns, were degenerated. The anterior and lateral columns were entirely free.

In the first case the heart was dilated and the myocarium hypertrophied. The mitral and aortic leaflets were the seat of numerous, small, recent, gray and grayish-red vegetations. Fluid from the cerebral ventricles proved sterile on culture, and no bacteria were found in the vegetations on the mitral valve, but staphylococcus aureus was obtained on culture from the heart's blood. In the second case the pericardium contained 40 c.c. of turbid, serous fluid with fibrinous coagula. The heart was dilated and the leaflets of the mitral valve were thickened and their margins the seat of pale, firm, nodular vegetations. Staphylococcus albus developed on culture from ventricular fluid and large numbers of cocci in masses and in chains were found in the endocarditic vegetations from the mitral valve, as well as emboli of cocci in capillaries, especially, however, the veins of the heart muscle of the left ventricle, and isolated incipient abscesses.

If any conclusions can be reached from the findings in the cases briefly recorded in the foregoing, together with such other evidence as is available, it is that chorea is an infectious disease, perhaps not dependent invariably upon the same micro-organism, but at different times due to different organisms. Neither is the seat of the lesion on which the symptoms peculiar to the disease depend clearly established, although it seems possible that this may be found in the basal ganglia and parts adjacent to them.

DIPHTHERIA BACILLI IN WELL PERSONS.

In 1900 the Massachusetts Association of Boards of Health appointed a committee to consider the question of the presence of diphtheria bacilli in well persons as ordinarily understood so far as the throat and nose are concerned. The report of this committee is just at hand.[1] Without considering certain questions connected with the morphological appearances that are considered as characteristic of the bacillus of diphtheria, suffice it to say that as regards the prevalence of the diphtheria bacillus in well persons the committee feels justified in the statement that in cities at least 1 to 2 per. cent. of well persons among the general public are the carriers of certain types of bacilli. Furthermore, that where well-persons are exposed to diphtheria, as in families, schools or institutions, the number of well persons harboring bacilli may range from 8 to 50 per cent. From animal and other experiments it seems that only a small percentage of the morphologically typical diphtheria bacilli found in well persons not recently exposed to the disease are virulent, but even the small proportion likely to transmit the disease constitutes an important factor in the actual spread of diphtheria. Inasmuch as persons with typical diphtheria bacilli in their throats are scattered among the general public to such an extent that in the larger cities there would be in all probabilities several thousand such cases, it would seem to be entirely impracticable to attempt to isolate the whole number, and this is one of the conclusions of this committee, provided that such persons have not, so far as known, been recently exposed to the disease. Wherever it happens that health officers or physicians learn of the existence of well persons harboring diphtheria bacilli it would be wise, of course, to give them full instructions in regard to the character of the secretions and to place a sense of responsibility on the infected person. In the case of well persons recently exposed to diphtheria in whom the bacilli are likely to be more virulent than in others the question is a little different. Even here isolation may be exceedingly difficult, and the committee does not see its way clear to make a definite recommendation in favor of isolation, but compromises by stating that infected persons in diphtheria families should not be placed under restrictions "except when it can be done without causing much friction or hardship, or unless the danger in any particular instance can be shown to be very considerable." The committee feels that it is advisable to keep children in infected families away from school and public places, that under similar circumstances the same would apply to teachers, nurses and others who come in close contact with children; that milkmen in whose households diphtheria is present should not be allowed to continue their business. When the disease appears in a community for some time free from it, then it would be advisable that all persons coming in contact with patients be isolated until shown free from bacilli. Much stress is laid on the value of education of the public to care for their persons and their secretions.

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[1] Deutsches Archiv fur klinische Medicin, 72 B., 5, 6 H., p. 504.

[1] Journal of the Massachusetts Association of Boards of Health, July, 1902.

It will be seen that the committee has followed a middle course, considering on the one hand the various conflicting interests of the public and on the other those of the infected individual. We believe that the committee acts wisely in adopting this course. The profession is not yet willing to believe in Behring's dictum that isolation in diphtheria in reality is useless in preventing the disease because of the frequency of diphtheria bacilli in the well. We must know more about the virulence and the persistence of bacilli in the well before readjusting our prophylaxis according to Behring's ideas.

THE X-RAYS AND CANCER.

The Journal of Advanced Therapeutics, a publication largely devoted to the medical and surgical employment of physical agencies, electricity, x-rays, hydrotherapy, etc., editorially notices in its last issue that any adverse criticism of the therapeutic use of the x-ray is now rarely met in the medical literature. It argues for its early employment in malignant disease, without waiting for surgical results, and asks, why should not the x-rays preclude the knife? It does seem from the reports of specialists who have used these methods that there is a vast field for hopefulness in their employment and very little of any drawback to their use. Whether they will supplant surgery in cancer is another thing; at present there is no warrant for assuming that they will. But considering the well-recognized limitations of surgery in these cases we ought to welcome any agency that promises so much good as do the x-rays. That they have a powerful effect on the tissues is undeniable, and the evidence seems strong, if yet not altogether conclusive, that they have a selective action on certain morbid cell proliferations and that they check malignant growth, while their destructive action on surrounding healthy tissues is so much less that it can be safely considered as negligible when the beneficial effects are taken into account. Of course, every precaution should be taken to prevent untoward action, but it seems that exposures far short of affecting normal cells have a marked effect on cancer growth. Even if not curative the x-rays have a very decided palliative effect in many cases, reducing discharge, destroying offensive odor, relieving pain and generally rendering what remains of life more comfortable both to the patients and to those who have the care of them. If this alone was effected the x-ray would be an inestimable boon, but it seems that—with all due conservation—we can hope for still more. The well-known delayed effects of the x-ray may also come into play, and even if immediate results seem to be lacking there may sometimes be still a chance for later beneficial effects of the treatment. At least, this is strongly suggested by the experience of Dr. W. A. Pusey, in a case reported in The Journal, August 30.

It would be unreasonable to expect that every case of cancer will yield to the rays, yet we are justified in holding that, even with our present limited experience, the outlook for malignant disease is somewhat better since the introduction of this treatment. It does not appear that, when properly used, it is incompatible with other methods, and it may be that its greatest future usefulness will be as an adjunct to surgical measures. That its application requires caution and skill goes without saying, and the possibilities of harm from careless use must not be forgotten. There is much also to be yet learned as to the best methods and technic and its application to other than external growths or those accessible from the outside through the natural passages of the body may yet be somewhat questionable. There still remains the fact that this agency promises to be far more than a mere accessory to diagnosis, and that it may develop into a most important therapeutic resource for a class of disorders that have heretofore been considered as among the most hopeless with which suffering humanity can be afflicted.

AMERICA IN THE HISTORY OF MEDICINE.

Though it seems difficult in the light of the development of medicine as an experimental science to point out any definite practical value derived from the study of the history of medicine, still there is something more to it than the promotion of a mere leisurely culture. Osler, who is somewhat of an enthusiast on the subject, although he does not believe in adding any course on medical history to our present overcrowded curricula, finds it practicable to constantly introduce the historic standpoint in classroom and clinic.[1] A plea for such study is made by a contemporary[2] on the ground that a very desirable national stimulus is aroused by recounting national achievements. The many excellent papers emanating from the Johns Hopkins Historical Club have been well calculated to do just this for American readers. One finds his patriotism considerably stirred, for instance, by Tinker's paper[3] on American surgery, wherein we find enumerated the following twenty-three remarkably valuable surgical procedures originated by Americans: Introduction of general anesthesia: ligation of innominate common carotid, common iliac, subclavian, scapular side of scaleni; introduction of animal ligatures; treatment of aneurism by compression; nephrectomy; cholecystotomy; ovariotomy; introduction of nearly all methods of intestinal anastomosis now in use; introduction of proper treatment of appendicitis; excision of parotid; excision of superior and inferior maxillæ, clavicle, interscapulo-thoracic amputation; operation for osteomyelitis; drainage of brain abscess; manipulation in the reduction of dislocations: skin grafting; closure of defects in cleft palate; invention of the tonsillotome. This is a list well worth remembering in view of the fact that, as Tinker says, "Many American surgeons are quite familiar with the work of foreigners, but lamentably ignorant of that of their own countrymen. This is partly due to the fact that the Germans, French and English seem to take much more pride in achievements of their countrymen than we do in America, and partly because many in our country have neglected to properly record and report their cases. If we do not take pride in our own work we can not fairly expect others to do so."

THE DEATH OF PROFESSOR VIRCHOW.

The death of Virchow removes from the active rolls of science and the medical profession one of its greatest names. Many, perhaps the majority, would say without any reservation that his was the greatest name of all. We know what he was in medicine, but he was illustrious in other lines; his wonderful and versatile ability was not concentrated alone on scientific medicine; he was great as an archeologist and anthropologist and also as a statesman and philanthropist. From the revolutionary year 1848, when he first entered the political field, till his death his interest in public matters never failed, thus demonstrating that the highest scientific labors and attainments were in him perfectly compatible with active engagements in the highest duties of citizenship. What he has done for his country as a legislator is little known to most of those to whom his scientific reputation is familiar, and not all have even a comprehensive idea of the extent and range of his work as a man of science. It was a saying in Berlin that "when he died it would be found that he was not one but four men," and this is still more true for the world in general than for his own townsmen and countrymen. How he coördinated patriotism with scientific breadth of view is well known in many ways; he loyally served his country but refused to sever his scientific association with the French when requested to do so after 1870. His appreciation of the best work had no local limitations; he taught other countries than his own to recognize the merits of their own forgotten discoverers, and he could be an unsparing critic when he thought his countrymen produced unworthy work. His sharp arraignment of German literary methods two or three years back is a well-known example. No one could question his patriotism—his services so long given to his country were evidence of that—but he was above the narrowness that even the pursuit of science does not always eradicate in its workers. The whole world came to delight to do him honor during his illustrious life, and now that he has passed away full of honors and years, his memory will live after him.

Medical News.

DISTRICT OF COLUMBIA.

New Medical Building.—Work has been begun on a new medical hall for the National University. It is to be constructed of brick and stone and will cost about $50,000. The plans provide for a dispensary, three lecture and clinic halls and the smaller recitation and study rooms needed for the medical and dental departments of the university.

Surgeon General Forwood Retires.—Brigadier General William H. Forwood, surgeon general of the army, closed his active military career September 6 by operation of law on account of age. He was relieved of his duties at the head of the medical department of the army September 8 by Brigadier General Robert M. O'Reilly, who was appointed by the President several weeks ago.

Emergency Hospital Report.—The annual report of this hospital shows that 12,446 patients were received, but only 68 deaths occurred. During the year there were treated in the dispensary 7211 new cases and there were 23,345 revisits for treatment. Of these patients 739 required surgical operations and 35,204 prescriptions were issued to the patients. In the emergency department there were 5235 new cases and 4282 revisits, making practically 9517 cases treated in all. Of these cases 1921 required operation.

Typhoid in the District.—According to late reports there are now 331 cases of typhoid fever under treatment in the District of Columbia, but during the last week there were only 6 deaths from the disease. The water generally used by the people of Washington comes from the Potomac River, the intake being at a point about sixteen miles west of the city, below the mouth of the Shenandoah. Frequently after heavy rains, the water is cloudy and even muddy. The project of installing a great filtration plant has been agitated for a long time, but Congress has not provided the necessary means. Regulations governing the milk supply, more stringent than those of almost any other city, are enforced by the District government. It is believed, however, that the present epidemic of typhoid fever may be due to some common source of contamination in milk sold in certain quarters of the city, and an effort will be made to locate the source.

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[1] British Medical Journal, July 12, 1902.

[2] Ibid, Nov. 9, 1901.

[3] Bulletin of Johns Hopkins Hospital, Aug.-Sept., 1902.

ILLINOIS.

Addition to Hospital.—A $75,000 addition is being built to St. Anthony's Hospital, Rockford, which will add 40 beds to the capacity of that institution. The new building will be ready for use about Christmas. The hospital is under the management of the Franciscan Sisters, who have seven other hospitals distributed through the states of Illinois, Iowa and Michigan.

To Determine Pollution Question.—For the purpose of determining to what extent the waters of Lake Michigan are polluted, not only by the sewers of Chicago, but by those of every other town along the lake shore from the Wisconsin to the Indiana state line, the State Board of Health is having made an exhaustive series of analyses of the lake water. Samples of the water are being collected under all possible conditions, and the work is carried on by bacteriologists of high repute. This action on the part of the state officials is undertaken largely on account of the present epidemic of typhoid in Chicago.

Chicago.

Personal.—Dr. M. L. Harris left for Wyoming, September 10, for a hunting trip. He will return early in October.——Dr. and Mrs. Julian E. Hequembourg have returned from their summer on the Massachusetts coast.

Miller Fined But Continues.—O. E. Miller, the head of the society whose hospital for inebriates was burned in June last, was fined $100, September 5, for practicing medicine without a license. The institution, nevertheless, is still in operation.

Accident to Dr. Steele.—Dr. D. A. K. Steele, president of the College of Physicians and Surgeons, is under the care of fellow members of his profession at his home, 2920 Indiana avenue. His right leg was broken while he was trying to board a car near his residence on September 5.

Prophylactic Aphorisms.—The Department of Health, in view of the typhoid situation, promulgates anew the following rules: Sterilize all drinking water; Pasteurize all milk and cream; keep flies from all food supplies; thoroughly wash in sterilized water all fruit and vegetables intended to be eaten raw and disinfect instantly all discharges of every description from those sick with typhoid.

The City's Deaths.—The 524 deaths from all causes reported during the week ended are ten fewer than the number for the week previous, but forty-one in excess of the number reported in the corresponding week of last year. The death rate per annum, per 1000, was 15. Aside from the typhoid situation the public health is satisfactory, a result largely due to the low temperature and increase of sunshine, the effects of which are chiefly seen in the mild character and low death rate of the diseases of infancy.

Water Analysis for Schools.—The Board of Education has decided to have comprehensive analyses made of the city water supply to determine whether it can safely be used by children in the public schools. Dr. John H. Long of the Northwestern Medical School will have charge of the work, and the bacteriologic examinations will be made by Professor Zeit of the Northwestern Medical School and probably by Professor Jordan of the University of Chicago. Samples of water will be taken from schoolhouses furnished with water from all the lake cribs. The work will take several weeks.

Delays Are Dangerous.—The Health Commissioner believes that as parents are compelled by law to send their children to school, it is the duty of the Board of Education to provide pure water for the children. The idea of individual children carrying bottles of sterilized or distilled water to the classroom is paltering with a serious matter. It is a demonstrated fact that typhoid fever is more prevalent in Chicago than it ever was, except in the epidemic years of 1890-'91-'92. There were 194 deaths from typhoid in August, which is the highest August record ever made by the disease in the city's history. In the first six days of September there were forty-eight typhoid deaths; in the first six days of August, twenty-two—an increase of nearly 120 per cent. The Board of Education should face these *alarming conditions* squarely and at once. Delay is dangerous. The situation demands immediate action.

The Increase of Typhoid.—Since August 2 there have been 249 deaths from typhoid fever. The disease is spreading to every quarter of the city, and the water supply from all sources is so frequently and so generally polluted that the Health Department deems it proper to refrain from characterizing any supply as "good" on any given day. There is nothing mysterious about this increase of typhoid. It is due to the polluted water supply. What is puzzling is the fact that the supply should be so polluted during unusually dry weather. Nearly eight years' *continuous observation* of the water supply and the conditions affecting it during which upward of 160,000 chemic and bacteriologic examinations have been made, by acknowledged experts, had resulted in the formulation of a belief in the laboratory that rainfall was the most potent factor in the pollution of the city water. Heretofore in dry weather the water was uniformly "good"; heretofore a rainfall of three-quarters of an inch in twenty-four hours—a quantity sufficient to flush out the sewers—was uniformly followed by water pollution. And such pollution was as *uniformly followed by an immediate increase in the intestinal-disease deaths* and later by an increase of typhoid—the former culminating, unless there was an intercurrent pollution, in about two weeks and the latter in about five weeks. For years charts have been constructed in the department showing the relation of these three factors—rainfall, water pollution, increased death rates from the impure water diseases—and they have followed each other, up to the present time, with what the *London Lancet* has styled "almost mathematical precision." But during August, 1902, and thus far in the present month there has been no sewer-flushing rainfall, the greatest amount in twenty-four hours having been only 0.57 of an inch August 13, and the total for the whole month being little more than one-half the average quantity during the last fifty-three years. Yet the water has averaged worse than during any August since these observations were begun.

MARYLAND.

Baltimore.

Faculty Changes.—Dr. John G. Jay has resigned the chair of surgery and Dr. Joseph T. Smith that of materia medica and the deanship in the Woman's Medical College.

The Baxley Professorship.—In the August 23 issue of THE JOURNAL, the Baxley Professorship of Pathology at Johns Hopkins was incorrectly announced as the "Boxley Professorship."

Typhoid Fever.—There were 38 deaths from typhoid fever in August out of a total mortality of 915. This is an unusual mortality. Forty-seven new cases of typhoid fever were reported for the week ended August 30 with 15 deaths and 99 new cases for the following week, with 10 deaths.

Personal.—Health Commissioner Bosley has returned from a visit to Nova Scotia.——Dr. Reid Hunt, associate professor of pharmacology at the Johns Hopkins Medical School, sailed for Europe, August 30.——Dr. James Bordley, Jr., of Baltimore, has been appointed professor of ophthalmology and otology in the Woman's Medical College.——Dr. Howard D. Lewis has been appointed health warden in place of Dr. Campbell F. Flautt, resigned.——Dr. Charlotte Murdoch has returned from a visit to Dr. Howard A. Kelly's hunting camp in Canada.——Dr. William Osler is at Point-a-Pie, Quebec.

Isolation of Bacillus of Infantile Diarrhea.—Dr. William H. Welch, director of the Rockefeller Institute for Medical Research, announces a discovery which promises to be of illimitable value as regards the prevention and treatment of intestinal diseases of children. After years of investigation and study the bacillus of infantile diarrhea has been isolated as a result of work recently carried on at the laboratory of the Thomas Wilson Sanitarium for Children, at Mount Wilson, ten miles from Baltimore. The organism found was identical with that which causes acute dysentery in adults. The investigation was conducted at the sanitarium by Charles W. Duval, of Annapolis, Md., a senior student at the University of Pennsylvania, and Victor H. Bassett, of Aledo, Ill., a senior student of the Johns Hopkins Medical School and pathologist to the Wilson Sanitarium. The opportunities for studying summer diarrhea have been particularly favorable at the Wilson Sanitarium, where each year during the warm months from 300 to 400 children suffering with intestinal trouble are treated. Out of

50 cases the specific organism was found in 42 It was observed that the blood of the patient had the property of clumping the germ isolated, just as blood serum in typhoid acts upon the typhoid bacillus, and this was a great help in identifying the germ, for the blood of the patient affected no other organism in a similar manner The cases investigated represented all varieties of the summer diarrhea of infants, except cholera infantum, of which there were no cases at the sanitarium this summer, and in every case the organism found to be present in the secretions was identical with that which produces acute dysentery in adults

MICHIGAN.

Burglars Shoot Physician—Dr Orletus P Eaton Detroit, was shot in the right knee while resisting two burglars who held him up at midnight, August 21, in his drug store

Detroit Hospitals Benefit—By the will of the late Senator James McMillan Grace Hospital receives $60,000, and the Home for the Friendless the Woman's Hospital and Foundlings' Home, the Children's Free Hospital Association and the Little Sisters of the Poor receive each $1000

Michigan to Missouri.—Dr. Guy L Noyes, demonstrator of ophthalmology at the University of Michigan, has been appointed professor of ophthalmology at the University of Missouri, Columbia, and Dr Clarence A Wood, assistant professor of pharmacology at Ann Arbor, has received the appointment as chief of staff of the hospital connected with the University of Missouri

Personal—Dr E B McDaniel Crystal Falls, will leave for Pekin, China, early in October He goes out under the auspices of the Presbyterian Board of Missions——Dr Robert C Bourland for three years instructor in anatomy in the University of Michigan, Ann Arbor, has resigned and returned to his home in Peoria, Ill——Dr Joseph C Tufford, Owosso, returned, September 1, after three months of study and travel in Europe——Dr Joseph A Crowell, Iron Mountain, has been appointed surgeon in chief of all mines operated by the Oliver Iron Mining Company

The Most Dangerous Communicable Diseases.—Meningitis was reported present during August at 13 places, whooping cough at 39 places, diphtheria at 41 places, smallpox at 50 places, measles at 56 places, scarlet fever at 92 places, typhoid fever at 148 places, and consumption at 227 places Reports from all sources show meningitis reported at 2 places more' whooping cough at 13 places less, diphtheria at 10 places less smallpox at 63 places less, measles at 62 places less, scarlet fever at 8 places less, typhoid fever at 63 places more, and consumption at 30 places less in August than in the preceding month

Comparative Morbidity for August—For August, compared with the preceding month, diarrhea, neuralgia, cholera morbus, cholera infantum, dysentery, influenza, typhoid fever, inflammation of kidney, inflammation of bowels and remittent fever were more prevalent, and pneumonia, measles and diphtheria were less prevalent For the same month, compared with the average for August in the last ten years, scarlet fever, pleuritis and smallpox were more than usually prevalent, and cholera infantum, consumption, dysentery, intermittent fever, inflammation of bowels, remittent fever, measles and diphtheria were less than usually prevalent

MINNESOTA.

Personal.—Dr Samuel F Hance, Minneapolis, after nearly thirty years of practice in that city, has moved to Fairport, N Y

Contagious Ward Opened—The new contagious ward at the City Hospital, Minneapolis, which has just been completed, was opened to the public, August 28

Minnesota Mortality—The report of the State Board of Health for July shows a death rate of 64 per 1000, 1135 *people out of a total of 1,751,395 having died during the* month The death rate in cities of more than 2000 inhabitants was 1 01 per 1000, in other parts of the state it was 44 per 1000 for the month Tuberculosis caused 143 deaths, only 57 of which were outside the cities Pneumonia caused 46 deaths, diphtheria 3, and cancer 50

Health Officer Sustained—The trouble at Hopkins, on account of the scarlet fever epidemic, is practically settled, and Dr Catherine A Burns, *who as health commissioner of the* town ordered the quarantine, is victorious City Physician Kistler of Minneapolis found the condition at Hopkins as Dr Burns had stated, and the contention of other local physicians that the epidemic was only German measles, has been disproved The citizens are now ready to obey the regulations of the State Board of Health

Physician Exonerated.—In the case of Margaret K Martin, appellant, against Dr Walter Courtney, Duluth, for malpractice, the case having been brought from Sherman County, the Supreme Court has sustained the finding of the lower court, which was *in favor of the defendant* Mrs Martin's husband was injured in a railroad accident, and was attended by Dr Courtney He died from blood poisoning, and Mrs Martin sued the physician for malpractice The lower court found that the doctor was *not guilty* as charged, and Mrs Martin appealed, the case now being finally settled by the Supreme Court

MISSOURI.

Personal—Dr Samuel P Stafford, St Louis, has been appointed physician at the Yakima (Wash) Indian Agency——Dr Rutherford B H Gradwohl, St Louis, has been appointed assistant chief of the Pathologic Division of the Bureau of Animal Industry in the Department of Agriculture, Washington

The Kyger Resolutions—The Kyger resolutions for the *abolition of the newspaper publication of personal medical* advertisements and advertisements of a vile and indecent nature, which have already been noticed in THE JOURNAL, were unanimously adopted by the Colorado State Medical Society at its *recent meeting in* Denver

Hospital President Fined.—Leon H Jordon, president of the new John Lange negro hospital, Kansas City, was fined $350 at a special session of the police court September 3, for violating the city ordinance passed during the summer of 1901 regulating private hospitals The ordinance requires that the management of a private hospital furnish the Board of Health with the name of the hospital, its purpose, its location, and the names and addresses of its officers, owners and managers, and must be established only with the board's approval and consent The defense was that the hospital was public and not subject to the law

The Louisiana Purchase Exposition.—The director of the Department of Liberal Arts, John A Ockerson, St Louis, has issued a prospectus showing the nature of the exhibits desired Those which come within the scope of medicine and surgery are as follows·

> Appliances instruments and apparatus for work in anatomy histology and bacteriology apparatus for sterilizing instruments and appliances for dressing wounds instruments for general and special medical research instruments and apparatus for general special and local surgery appliances for dressing wounds apparatus for plastic and mechanical prothesis orthopedic apparatus apparatus for hernia medical gymnastics material, instruments and apparatus for special therapeutics instruments and apparatus used in the practice of dentistry appliances for the use of the infirm, of invalids and of lunatics artificial limbs instrument and medicine chests for army and navy use appliances for rendering aid to the wounded on the field of battle and in case of accident ambulance service etc appliances for rendering aid to persons apparently drowned or asphyxiated and instruments and appliances for veterinary surgery

St. Louis Health Department Report.—In the fiscal year ending March 31 1902, according to the report of Health Commissioner Starkloff, there were 10,601 deaths, 754 more than in the previous year, representing a mortality rate of 17 12 per 1000 The largest death rate was in June, July and August of 1901, there being 637 more in those months than in the same period of the preceding year The increase is charged to the hot weather of last year Diphtheria *mortality* dropped from 344 to 259 There were 159 more deaths from consumption last year than in the year previous The unsanitary state of the drinking water of the city has been proven by analytical examination and the large number of typhoid cases The mortuary records for last year would show 3500 or 4000 deaths from typhoid had all the cases of that class been reported According to this estimate, there would have been 34 deaths from typhoid to 100,000 inhabitants The antitoxin investigation is reviewed without comment, as is also Dr Starkloff's bill for a Missouri general hospital, which he had introduced into the legislature a year ago The building of an institution for the care of feeble minded and epileptic children is recommended Vaccination is defended as a preventive of smallpox and other diseases

NEW YORK

Cornerstone Laid.—Governor Odell laid the cornerstone of the new Dobbs Ferry Hospital, August 29 In its private rooms and wards the new hospital will have accommodation for fourteen patients

Deaths in New York State.—There were 10,938 deaths in the state in July, according to the bulletin of State Health Commissioner Lewis. The average number for the corresponding month for the past five years has been 11,581.

Albany Hospital Changes.—Dr. Gerald Griffin has resigned to enter practice. His place on the staff has been filled by the appointment of Dr. Fred S. Lettice, Sprout Brook, who was graduated from the Albany Medical College last May.

Dr. Mann Made Honorary President.—During the sojourn of Dr. Matthew D. Mann of Buffalo in Europe he will attend the International Congress of Obstetrics and Gynecology at Rome. Dr. Mann has been elected an honorary president for America at this congress.

Buffalo Personals.—Dr. Herbert U. Williams, is in Europe. ——Dr. George Y. York has returned from a two months' vacation in Europe. Dr. Max C. Breuer, who is in Breslau, is expected to return September 18.——Dr. S. S. Green has returned from a month's fishing trip in Upper Canada.

Nurses Demand Recognition.—The New York State Nurses' Association demands legislation recognizing nursing as a profession. Legislation will prevent the probationer or pupil dismissed for unfitness from donning a uniform and calling herself a trained rurse, thus imposing on the public and endangering the lives of the patients.

Personal.—Dr. Nestor Ponce de Leon has been appointed medical inspector for the port of Havana, Cuba.——Dr. Hobart Cheesman sustained a severe scalp wound and a probable fracture of the skull, September 3, in a street-car accident.——Dr. Jesse T. Duryea, Brooklyn, superintendent of the Kings County Hospital, has resigned, to take effect November 1.

Anti-Malaria Propaganda.—The New York City Department of Health is devoting special attention to malaria, which President Lederle thinks may be more prevalent than the records of the department indicate, owing partly to the failure of physicians to report cases, and partly, perhaps, to the reporting of malarial cases under other names through mistakes in diagnosis. It is the earnest desire of the Department of Health to acquire all possible information as to the occurrence and distribution of malaria in New York City, with a view to its eventual stamping out, and physicians are requested to notify the department of all cases of malarial fever coming under their observation. Information is desired regarding the location of the fever, so that as far as possible proper measures may be taken to correct the unsanitary conditions which produce it. Malaria is always transmitted by means of the bites of certain mosquitoes (anopheles), which can be located and identified with comparative ease, and their breeding places found. In the majority of instances the occurrence of a case of malarial fever in a given locality means the existence of a breeding place of the anopheles mosquito close at hand. The investigations, therefore, will be with reference to the source of infection, the breeding places of the mosquito. To facilitate the desired notification of malaria by physicians, special postal cards have been prepared, and a supply of these cards will be sent to any physician on request. In return for such helpful co-operation on the part of physicians, the Department of Health will make free microscopical examinations of the blood for malarial parasites a part of its routine work.

WASHINGTON.

Pullman Hospital.—A hospital has been opened in Pullman under the charge of Dr. W. W. Webb, for the use of the profession of Pullman, Albion and Colton.

Dr. Thomas Wins.—Dr. Charles P. Thomas, Spokane, has been given the verdict in the damage suit for $30,000 instituted against him by W. R. Scott for criminal assault.

Personal.—Dr. Charles S. Kalb has resigned as health officer of Spokane and Dr. DeWitt C. Newman has been appointed to the position.——Dr. George W. Farmer, Hillyard, has been appointed assistant superintendent of the Eastern Washington Hospital for the Insane, Medical Lake, vice Dr. W. J. Howells, made superintendent.——Dr. Homer J. C. Birney, Whatcom, is taking a course of hospital work in London, Berlin and Vienna.

WISCONSIN.

Hospital Changes Owners.—Dr. Fred N. Brett, Green Bay, has purchased the Green Bay General Hospital and has equipped and will operate it as an institution open to any physician for the care of his patients. There are to be no wards, but each patient will have a room.

Doctors and Nurses Resign.—Four employes at the Milwaukee County Hospital, including one interne, one assistant physician and two nurses, have handed in their resignations and they have been accepted. The superintendent of the institution states that the employes had been delinquent in observing the rules of the institution pertaining to the hours which should be kept and that the violation of these rules unfitted them for duty.

Personal.—Dr. H. P. Conway has completed his service as interne in St. Mary's Hospital, Minneapolis, and has located in Spring Valley.——Dr. Daniel W. Harrington, Oshkosh, will move to Milwaukee early next month. He has been appointed to the chair of biology and physiology in Milwaukee Medical College.——Drs. W. F. Beutler, superintendent of the Milwaukee, Hospital for Chronic Insane, and Moses J. White, superintendent of the Milwaukee Hospital for the Insane, Wauwatosa, have returned from an extended European trip.

GENERAL.

Dr. Herman Commended.—Col. Maus, chief health inspector of the Philippines, highly commends Dr. M. Herman, a medical inspector of the Board of Health, for his able work. He has taken the place of the late Major Meacham, who was next in authority to Col. Maus.

CANADA.

Hospital Gifts.—$3000 has been sent to the Endowment Fund of the Montreal General Hospital. The doner asks that the gift be credited to "Anonymous." Lords Strathcona and Mount Stephen of Montreal has contributed the princely gift of $80,000 yearly to London, England, hospitals.

Physical Culture for Ontario Insane.—The Hon. J. R. Stratton, Provincial Secretary for Ontario, under whose direction are the insane asylums of the province, has decided on a complete re-organization of the system of instruction at the Orillia Asylum. He will introduce a course of physical culture in order to develop both body and mind. The Orillia Asylum is for idiots only.

Appointments.—The appointment is announced of Dr. G. H. Merrill of Montreal, to become assistant surgeon at the Hotel Dieu Hospital, to succeed the late Dr. J. A. S. Brunelle. Dr. Merrill is at present assistant professor of clinics at Laval University. He was graduated from the Victoria School of Medicine in 1876. Dr. C. W. Hopkins has been appointed house surgeon at the Montreal Maternity Hospital.

Calgary's Climate Cures Consumption.—Dr. James Stewart, Montreal, professor of medicine in McGill University, has returned home after an extended tour of the Canadian Northwest Territories. He was very much impressed with the climate round Calgary and believes that that section of the Dominion along with certain parts of British Columbia offer as good opportunities as any other climate in the world for the cure of consumption. The neighborhood of Calgary would be a very fine location for a large sanitarium.

Personals.—Dr. M. A. Curry, surgeon to the Coronation Contingent, has returned to Halifax.——Dr. J. A. McKenzie, assistant medical superintendent of the Nova Scotia Hospital, will pay an extended visit to the New York hospitals.——Dr. A. Donaldson, Brockville, Ont., who accompanied the hospital corps to South Africa with the Canadian Mounted Rifles, has accepted a commission in the British Army and will not return to Canada.——Dr. F. Montizambert, Director-General of Public Health for the Dominion, is in the west for the purpose of inspecting the Williamhead Quarantine Station.

FOREIGN.

Milk for Liverpool Poor.—The city of Liverpool furnishes to the poor at a low price sterilized humanized milk.

The Czar's Physicians.—Twenty-four physicians attend the Czar of Russia. They are a physician-in-chief, ten honorary physicians and four honorary surgeons, two oculists, a chiropodist and an honorary chiropodist, two court physicians, and three specialists for the Czarina.

Memorial to Reil.—The famous German anatomist, Reil, was buried in his garden at Halle, the gift of the ruling sovereign. The garden now forms part of the zoological gardens and the National Association of Alienists has recently fenced it in and erected a memorial.

Deaths Abroad.—The sudden death is announced of the superintendent of the Paris "Assistance Publique," Dr. C. Mourier, in his forty-fifth year.——Also of Dr. A. von Remmert, surgeon general of the Russian army and body physician to the Czar.——Dr. P. Ploss, the professor of medical chemistry at Budapest, also died recently, in his fifty-eighth year.

Wiesbaden's Ozone Water Works.—Wiesbaden has completed its plant for the application of the Siemens' process of purifying water by means of the generation of ozone by electricity. The water trickles over gravel through air-tight towers, and the ozonized air is forced through it. The ozone is soon transformed into oxygen, and the water retains no trace of the purifying process.

London Birth Rate Less.—Sociologists have been disturbed by the vital statistics issued last week, showing a marked decline in the English birth rate. London shows a decrease since 1881 from 27.4 to 20.6 per 100 of married women under the age of 45. The decline is most noticeable in the fashionable quarters of the capital, while the slum areas are almost stationary. Outside of London the decline amounts to 25.8, against 30.3 in 1881.

Special Bottles for Poisons.—One of the last acts of the late superintendent of the Paris "Assistance Publique," which has charge of all the public hospitals, was to decree that poisonous substances must henceforth be kept in three-sided bottles or jars with a rough surface on two sides. By this means it will be impossible to mistake the dangerous bottles by day or night. The Lariboisière Hospital is to be equipped at once with the new bottles, and if they prove to answer the purpose the others will be supplied in turn.

Foreign Honors to American Surgeons.—Surgeon Oliver D. Morton, U. S. Navy, has been authorized to accept a present tendered him by the Emperor of Germany. Former recipients of honors were Assistant-Surgeon William J. Wilson, U. S. Army, a decoration from the Khedive of Egypt, for gallantry in battle; Surgeon-General Rufus Tryon, U. S. Navy, a medal from the government of Venezuela, and the late Medical Inspector, George Worth Wood, U. S. Navy, a decoration from the Queen of Hawaii.

Cholera in Egypt.—The total cases since the outbreak to August 25 were 3090; 2085 deaths; 294 cured. Minieh, Assiout and Ghizeh provinces are most seriously affected. Since the first few days of the appearance of the scourge at Moucha, and subsequently at Cairo, the rapid progress of the disease has been checked by the efficiency and extraordinary energy of the sanitary department, and the situation thus improved and made more hopeful. Turkey and most of the European countries have declared Egypt infected and imposed more or less severe quarantine restrictions against travelers and traffic from that country.

Arsenic Springs Poison Many.—It is reported that 20 are dead and over 400 seriously ill at Mapiami, Mexico, as the result of the breaking forth of arsenic springs in the mountains near the city. The waters of the arsenic springs have united with those of the springs which supply the city with drinking water and the distributing reservoir is said to be thoroughly impregnated with arsenic. It was some time before the source of the poison was ascertained. According to reports, by that time hundreds were ill all over the city and physicians were wired from all the surrounding mining camps and towns. The citizens are now suffering for want of water.

Cholera in Japan and China.—The epidemic of cholera is reaching alarming proportions on the other side of the Pacific. It extends from Java to Japan and almost every city on the coast and many from the interior are affected. The disease, too, is being contracted by Europeans as well as natives. In Hong Kong from the first of the outbreak to August 6 there had been 523 cases, six of the patients being Europeans, and 511 deaths, of whom four were Europeans. In Tientsin the last report placed the number of cases for the year at 1049 and 754 deaths within the city walls and 1015 cases and 593 deaths outside the city walls. In other places in China the proportion of cases and deaths is just as great. Dispatches say hundreds have died in Java and thousands in Japan.

International Congress of Gynecology.—Nearly fifty communications are on the program of this Congress which opens its doors at Rome, September 15. The first subject to be discussed is as announced, "Medical Indications for Inducing Artificial Abortion," and addresses are to be presented by Hirst of Philadelphia, Hofmeier of Würzburg, Pinard of Paris, Rein of St. Petersburg, Schauta of Vienna and Simpson of Edinburgh. The second subject is "Hysterectomy in the Treatment of Puerperal Infection," with addresses by Fehling of Strassburg, Leopold of Dresden, Treub of Amsterdam and Tuffier of Paris. "Tuberculosis of the Female Genital Organs" will be the subject of addresses by Amann of Munich, Martin of Greifswald and Veit of Leyden. The last question on the order of the day is "Surgical Treatment of Cancer of the Uterus," with addresses by Cullen of Baltimore, Freund of Berlin, Jonnesco of Bucharest, Pozzi of Paris and Wertheim of Vienna. The thirtieth professional anniversary of Professor Porro, September 11, was to have been celebrated as a special feature of the Congress with the dedication of a ward in the Sanatorium and of an orphan asylum at Salsomaggiore in his honor, and other ceremonies. The celebration will be carried out as planned, but will take the form of a memorial. Members of the Congress are invited to Salsomaggiore for these ceremonies as guests of honor, free of expense for transportation and at the hotel. The *Presse Médicale* has organized a special excursion to the Congress, leaving Paris September 8 and returning September 24.

Miscellany.

Benzine for Transient Redness of the Nose.—Bruck has noticed that the application of benzine for a few seconds will banish temporary erythema and render the skin less shiny. The application does not irritate the skin and can be used as a prophylactic measure under circumstances liable to induce erythema in the predisposed. It is applied on a gauze compress over the entire patch of hyperemia, avoiding friction.—*Sem. Méd.*, July 16.

Difference Between Intoxication with Illuminating Gas and Carbon Dioxid.—Ferchland and Vahlen describe experimental research on dogs and frogs which demonstrated that gas is incomparably more toxic than pure carbon dioxid, consequently the toxicity can not be due to the latter alone as the gas contained only 9.7 per cent. of the dioxid. They conclude their report in the *Arch. f. Exp. Path.*, xlviii, 1 and 2, with the remark that the substances in illuminating gas to which it owes its toxicity are still as much of a mystery as those to which it owes its odor.

The Reflexes from the Standpoint of Life Insurance.—J. Crocq of Brussels delivered an address on this subject at the Second International Congress of Medical Examiners, which was held at Brussels last September. It is published in full in the *Wiener Med. Wochenschrift*, 1902, Nos. 17 to 25. He asserts that the absence of knee jerk should entail rejection of the candidate, and the nervous system must be subjected to thorough examination in case this reflex is moderately weak or exaggerated. Exaggeration is usually due to an organic lesion, but sometimes occurs with a mere neurosis. Rejection should also follow marked weakness or absence of the pupil reaction. If it is sluggish the nervous system should be investigated. No examiner should neglect to seek for Babinsky's sign and the tendon clonus, and discovery of either of them forbids acceptance of the applicant, as also of the Argyll-Robertson sign and differences in the pupils of organic origin. The other reflexes are of comparatively minor importance.

Danger from Medicine Samples.—We are pleased to note that the dangers incident to the promiscuous distribution of samples of patent nostrums are coming to be generally recognized by the municipal authorities all over the United States. Recently the Municipal Assembly of St. Paul, Minn., passed an ordinance requiring all persons who desire to distribute samples of medicines to come before the council and obtain a permit and at the same time to submit a sample of the medicine to be distributed, to the health department for examination as to its character. We have frequently seen reports of serious results following the miscellaneous distribution of so-called patent medicines. These samples are frequently left on door steps and in the reach of children lacking discretion, who may and often do do serious injury to themselves through eating the samples. In view of the reputation for vigilance borne by the health commissioner of the City of St. Paul, we feel confident that this ordinance will be so administered as to be of great service in protecting the citizens of that city against danger from this source.—*N. Y. Med. Jour.*

Acclimation of the White Race in the Tropics.—Wulffert contributes an article on this subject to the last *Vierteljahrsschrift. f. off. Ges. Pflege*, xxxiv, 3. He asserts that whenever the habitual use of alcohol has shown any effect on the nerves or muscles, the individual in question will find it difficult or impossible to live with safety in the tropics. Those intending to live in a tropical clime should train for it by years of severe manual labor or athletics in the open air, by restricting their diet to that recommended by Rubner of Cameroon in his work in *Archiv f. Hygiene*, xxxviii, p. 154, and by complete abstention from intoxicating liquors. Persons from the temperate zones should not go to the tropics expecting to till the soil. Native labor can be obtained for this, and white settlers should be overseers, superintendents, merchants, officials, artisans or soldiers, but not farmers. Rubner emphasizes the importance of water, especially with meat, to compensate for the absence of water in meat, and also for the salt eaten with it. On a diet of 16.7 calories from albumin, 16.3 from fats and 66.9 from carbohydrates, 1.803 gm. of water would be required for each calorie or 4327 gm. for 2400 calories, to which should be added 74 gm. to replace the water excreted in the feces on a mixed diet. This amounts to a total of 4401 gm., nearly four and one-half quarts of water a day, part of which can be taken in form of fruit.

Nitric Acid in Treatment of Gonorrhea.—Porosz attributes the curative effect of nitrate of silver to the nitric acid rather than to the silver, and has found the former alone extremely efficient. He injects or instills in chronic cases a .5 to 2 per cent. solution of nitric acid and in the acute form injects into the anterior portion of the urethra about 1 gm. of nitric acid in 300 to 400 gm. water. Two or three weeks complete the cure. He adds particulars in his communication to the *Wiener Med. Presse*, 1902, 10.

Ogata's Method of Reviving the Asphyxiated Newborn.—The Japanese medical journal, *Sei-I-Kwai*, xx, 8, contains a detailed description in English, with illustrations, of this method of reviving asphyxiated infants. It is now in current use in Japan, where the small rooms and low ceilings forbid the use of Schultze's swinging, and it seems from the report to be proving as effective as the latter. The legs of the child are held firmly in the right hand, the forefinger between them. The trunk of the child is then bent over as it is held in a sitting position, until the shoulders nearly touch the knees as the arms droop forward. The trunk is then bent back into the dorsal decubitus with the left hand, the arms falling free and opening the lungs. The trunk is then bent upward and forward again until the shoulders again nearly touch the knees. These movements are repeated regularly 8 to 10 times a minute and usually prove sufficient to induce natural breathing. But in severe cases, after the first and second movements, and while the infant is lying horizontally, the left hand is taken away from its back and the trunk is allowed to drop backward and downward with the arms flung wide, which expands the lungs to a remarkable extent. Ogata says of his method what Schultze said of his, that no one should venture to try it on the living subject or even to criticise it until he had done it a hundred times on the cadaver. He claims that it is very effectual and is much less distressing to an onlooker than swinging. It stimulates the circulation, especially in the medulla oblongata, the seat of the center of respiration. Ogata remarks in conclusion that "the apparent death of the newborn child from disturbance in the process accessing oxygen is one of the most discomfortable accidents that can happen during parturition," and he can confidently recommend his method for such cases after seven years of thorough testing and practical experience.

Mrs. Eddy and Common Salt.—Mrs. Eddy, she of the brilliant intellect and luminous diction, recently enriched the world with the following important item of information: "To quench the glowing flames of falsehood, once in about seven years I have to repeat this: that I *use no drugs whatever*, not even coffee, tea or red pepper, though every day, and especially at dinner, I indulge in homeopathic doses of common salt." Dr. Sweringen thus comments on the above in the *Chicago Clinic*: "I can not understand why Mrs. Eddy should indulge in common salt even in homeopathic doses, since in 'Jahr's Manual of Homeopathic Medicine,' of the edition of 1838, four and a half pages are devoted to the effects of common salt. Its mental effects are described as follows: 'Melancholic sadness, with searching for many unpleasant things, much weeping and increased by consolation, sorrowfulness about futurity, anxiousness also during a thunderstorm, chiefly at night, indolence, aversion to talk, joylessness and disinclination to labor, hasty impatience and irritability, easily frightened, hate of former offenders, fretfulness and disposition to angry violence, inclination to laugh, alternation of fretfulness and hilarity, great weakness of memory and forgetfulness, thoughtlessness and mental dissipation, misusing words in speaking and writing, inability to reflect and fatigue from mental exertion, awkwardness.' These are the effects which homeopathy attributes to common salt, which, if correct, will account for some of the idiosyncrasies, eccentricities, hallucinations, delusions, illusions, and peculiarities of Mother Eddy. I should advise her not to eat any more salt, even in homeopathic doses. It will certainly ruin her mental and physical constitution. We now know the cause of her 'thoughtlessness and mental dissipation and misuse of words in speaking and writing.' It is the use at dinner of homeopathic doses of common salt. Perhaps, if she should cease the eating of common salt, she would be better able to explain satisfactorily the occult, metaphysical intricacies of Christian Science." In our opinion, not only common salt but every bit of food these latter-day lunatics take is a direct contradiction to their tenets and a refutation of their belief in the non-existence of matter. But who would expect logic and consistency from lunatics?—*Merck's Archives.*

A Canadian's "Look-in" at the American Medical Association.—Saratoga—full of sunlight, smiling men and women meeting, greeting, and tarrying for half a week of days to attend the annual convention of the great American Medical Association. The Convention Hall is well arranged for its purpose, and blessed alike, these many moons, by meetings of Sunday School Alliances, Distillers, Sons of the Morning, Sons of the Evening (the names are not copyrighted), Jew and Gentile; in fact, all sorts and conditions of men, running the social gamut, all the way up to the splendid fifteen hundred Knights of the Scalpel, who delved into the deepest scientific problems all day, and dined and danced far into the night. Saratoga, although of late years very cosmopolitan, is diplomatic in the extreme. She knows whom she is welcoming, and arrays herself fittingly to entertain her guests. The enormous United States Hotel was "Headquarters," and to join in the throng of promenaders upon its spacious verandas and lawns, whose huge trees were ablaze with lanterns and devices of colored lights, and listen to the concert, band and vocal, arranged in honor of the delegates, was indeed a pleasure. To drive through old Saratoga's streets under the avenues of trees out to the various springs, and play "follow-the-leader," until at last the funny man of the party, as we drew up at still another Spouting Geyser, relieved our sense of polite obligation (the water was offered freely) by laughingly saying, "You may drive a horse to water, but you can't make him drink"—any more! Sometimes discretion is the better part of valor. The closing evening of the Convention, the President's reception at the United States Hotel, was brilliant in the extreme, the handsome drawing rooms flower laden, the beauty of the costumes of the ladies and the kindness of the unwearied greetings of Dr. and Mrs. Wyeth and Dr. Comstock (Chairman of the Reception Committee), made all present feel glad to be there. The museum of exhibits was also very fine, and the exhibitors vied with one another in courteous attentions to the visiting physicians. At the close of the meeting, as good-bye was said, all through the corridors echoed and re-echoed, "Till we meet again in New Orleans in May, 1903." Nothing succeeds like success, and the enthusiasm of the members carried all present alike in its flowtide of good fellowship, like a leaf on a stream. Never for a moment did the Canadian guest feel himself an alien, nor even a stranger, and he has carried home a lasting and delightful memory and a big ache in his wrist as a souvenir of the heartily extended glad-hand of his "brother chips," and in his heart old Jack and young Glory float side by side.—*Can. Jour. Med. and Surg.*

Married.

Anthony L. Rettaliata, M.D., to Miss Agnes M. Ryan, both of Baltimore, August 27.

W. B. Kirkpatrick, M.D., to Miss Susie A. Brinley, both of Path Valley, Pa., August 15.

J. Talley Spence, M.D., Alma, I. T., to Miss Mary R. Brand, of Memphis, Tenn., August 30.

William F. Berner, M.D., Merrill, Iowa, to Miss Hannah Boubeck of Chicago, August 27.

Robert M. Andrews, M.D., to Miss Clara Louise Church, both of Bergen, N. Y., August 26.

Adams B. Howard, M.D., Cleveland, Ohio, to Miss Madge Armor of Wooster, Ohio, September 4.

Louis L. Gilman, M.D., Rochester, N. H., to Miss Catherine Cunningham, of New York, August 11.

Walter E. Foster, M.D., Richmond Ill., to Miss Clara Emma Marckhoff of Elgin, Ill., August 21.

Guy L. Noyes, M.D., Ann Arbor, Mich., to Miss Lucia Weigand of Traverse City, Mich., August 27.

John J. Flynn, M.D., Worcester, Mass., to Miss M. Agnes Sweeney of North Abington, Mass., August 27.

Porter Bruce Brockway, M.D., Toledo, Ohio, to Miss Eva Marjorie Plews of Lake Linden, Mich., August 26.

Deaths and Obituaries.

THE DEATH OF PROFESSOR VIRCHOW.

Rudolf Virchow is dead. With his death on September 5, near the end of his eighty-first year, there passed away one of the most influential investigators, leaders, and teachers that medicine has known. The epochal significance of his great generalization and the basal importance of much of his work will make the name of Virchow forever prominent as are only a few in the history of the development of medicine. Endowed with a remarkable intellectual endurance he was permitted to continue his many-sided activity until well past the venerable age of four score. Some months ago he suffered an accidental fracture of the hip; from the effects of this—at that age—so ominous an injury, he apparently made a satisfactory recovery, but only to meet with a second and more serious accident that eventually led to his death.

Only the merest outline can be given at this time of the busy and eventful career of this versatile genius—pathologist, anthropologist, archeologist, hygienist and reformer. Born Oct. 13, 1821, in Schievelbein in Pomerania, he studied medicine in Berlin from 1839 to 1843, where he came under the lasting influence of Johannes Müller; in the fall of 1844 he became prosector under Robert Froriep at the Charité in Berlin, and in two years more the latter's successor. The direct outcome of this early work as prosector was a fundamental change in the technic of postmortem examination—producing eventually a technic that became the world's standard—and introducing a system of reliable autopsy records. Those who were privileged to witness these early autopsies were electrified by the secrets dead bodies were made to tell. In 1847 he and Benno Reinhardt founded the *Archiv für Pathologische Anatomie und Physiologie und für klinische Medicin*, commonly known as *Virchow's Archiv*, and since Reinhardt's death in 1852 conducted by Virchow alone. *Virchow's Archiv* is now running its 169th volume and forms one of the most important serials in scientific medical literature because of the many pioneer articles embodying the results of valuable original investigations, especially in the field of pathological anatomy and histology, that have been published in it. The influence this *Archiv* has had on the growth of scientific study in medicine can not be overestimated. Many of the earlier volumes have been reprinted again and again in order to fill the demands for complete sets in public and private libraries. The earlier numbers are especially valuable, too, because they contain many articles by Virchow himself in which he develops his views in regard to the state of scientific medicine in those days. In 1848 Virchow made a medico-sociologic study of a devastating epidemic of typhus fever in Upper Silesia, and in his report he fearlessly exposed the shortcomings of governmental officials and advocated radical reforms. He next joined in the publication of a periodical called *Medicinische Reform*, devoted to politico-medical reform measures and in which among other changes there was urged the establishment of a ministerial bureau for public hygiene. His active participation in the liberal movement connected with the revolutionary efforts of 1848 led to his dismissal from public positions in Berlin, and he accepted the offer of the chair of pathological anatomy in Würzburg, the university of which was the first to establish a full chair in this branch. Here he continued his investigations, interested himself deeply in the development of a scientific atmosphere in the university and in the matter of accurate municipal statistics of local diseases. He assumed co-editorship of Canstatt's Jahresbericht which since 1867 has been published by Virchow and Hirsch. In 1856 he was recalled to Berlin as Professor of Pathological Anatomy, General Pathology and Therapy and Director of the Pathological Institute, and here he remained until the end of his life. Only last year a magnificent new building was erected for his laboratory, and in order to house adequately the great museum that he had created during his long tenure of office.

While in Würzburg some of his more important original investigations were published, notably those on the chemistry and morphology of the blood and on thrombosis and embolism. The work on thrombosis and embolism is to a large extent experimental, and it constitutes the real starting point of our definite knowledge of these fundamental processes. In 1858 appeared his "Cellular Pathology," based upon lectures given to physicians especially, and long recognized as an immortal classic that virtually created a new era in medicine. The famous phrase "omnis cellula e cellula" "sounded the death-knell of the old humoral pathology and the birth of the new cellular pathology," which led to systematic study of the changes produced by disease in the constituent elements of the organism. Only in this way could it ever have been possible for the student to penetrate close to the real secrets of natural processes, pathologic as well as physiologic, and to arrive at general laws that would permit the formulation of scientific hypotheses in medicine. By means of the principle established by Virchow "all medicine came nearer natural processes by at least three hundred times" (Virchow), and pathology became that branch of biology which studies the disorders of cells and cell complexes. It is as the founder of cellular pathology, which Virchow himself was the first to recognize as the natural development and application of the work of his predecessors, especially Morgagni and Bichat, and of discoveries and generalization by investigators in other fields, that Virchow's name will ever remain an eminent landmark in the history of medicine. Medical men the world throughout are familiar with this aspect of his achievements. It is part and parcel of their medical education and thought, and though volumes could be written concerning the various phases of cellular pathology as it now presents itself in the light of developments that have taken place since Virchow retired from active investigation—it is now nearly half a century since he fought and won the battle for the principle of cell pathology—this is not the time nor the place for any extended discussion.

From the beginning of the publication of his *Archiv* in 1847 Virchow strongly opposed rationalism and empiricism in medicine, declaring that the time had come for the application of the inductive method to medical investigation. What was needed was close observation of individual cases by clinical and anatomical methods. In the very first volume, in the famous article in which he laid down the lines along which medicine was to advance—and along which it did advance—he says: "The filling of the clinical positions in a hospital has now become a matter of supreme importance because the clinician must be not only a scientific practitioner, but also an observer and investigator"—a remark of special significance when applied to American conditions to-day and to the discussions now carried on concerning the real university medical school. Virchow's organization of the teaching and investigation of pathologic anatomy was nothing less than masterly. It resulted in the pathologic institutes, or laboratories, which we now know are indispensable for teaching and research. His official report to the government on the need and scope of such establishments with various subdepartments, like chemical laboratory, museum, etc., written in 1846, still remains worthy of study by those interested. Thus we see clearly that he was applying general scientific principles and methods to the study and investigation in medicine, and so successful were the efforts to put an end to the day of "systems" and dyscrasias that a few years later he felt encouraged to write: "The scientific method of medical research is firmly established. It is not my merit to have discovered it. Without me it would have been found and the new trail would have been followed. But I trust the battle against the existing mixture of arbitrary rationalism and gross empiricisms, fought by the *Archiv*, in which I have aided by the introduction of genetic investigation, may have contributed much in procuring new aims for pathology."

Rud. Virchow

Virchow became famous at a remarkably early age, and his fame soon passed beyond the confines of Germany. Before long students from other lands were attracted to him, and thus the waves of his influence were carried to all parts of the world. He had in full measure the enviable power of exciting an investigative spirit in his pupils. Von Recklinghausen, Klebs, Orth, Cornil, Reisz, Axel Key, Grawitz, Cohnheim, who died all too soon, beside many, many more, have reached great prominence as teachers and investigators who carried the cellular principle of the great master to new centers, where its stimulating influence soon was felt. In 1863-67 he published his great work on tumors. Though never finished it remains to this day perhaps the most valuable work for consultation in regard to the subject. His literary activity assumed large proportions and he entered many other fields of knowledge than the purely pathologic. He became an authority in anthropology, and archeology, and achieved almost as great a reputation as writer and investigator among the workers in these sciences as he did in pathology in the minds of those who think of him as a pathologist only, and remain in ignorance of the versatility, one is tempted to say universality, of his genius.

There is one aspect of Virchow's work that merits special mention because of the example he here placed before scientific men and medical men in particular. We refer to his continuous activity, during his long life, in political and medicosocial matters. Virchow was a splendid example of the scholar in politics. Reference has been made already to his liberal tendencies and the fact that they brought him into governmental disfavor. He was elected as Prussian representative in the lower house as early as in 1848, but resigned because not old enough to hold the position legally, a position to which he was elected again in 1862. Since 1861 he served continuously in the city council of Berlin. In 1880 he was chosen a member of the Reichstag, in which he continued to occupy a seat for many years, taking a most active part in the proceedings and remaining true to his liberal convictions always. He remained a politician in the highest and best sense of the word throughout his long life, and his political career alone would insure the handing down of his name to posterity. Although not a brilliant orator in the sense the word is used in America, his words—and he spoke frequently—were always received with attention by the Reichstag because of the wisdom, courage and moderation of his views. Virchow was Bismarck's most persistent and vigorous parliamentary opponent and was once challenged to a duel by the man of blood and iron, a challenge to which Virchow paid no notice. Science and good citizenship do not exclude each other, and the humanitarian side of Virchow's work is one of its most pleasing features and one worthy of emulation everywhere, not least in our own country. In his various public capacities he exercised an immense influence on legislation of various kinds, especially when it concerned matters of public health and sanitation and the relief of the oppressed and miserable. He said: "Humanism, in its true meaning, is no apotheosis of mankind—for that would be anthropomorphism—but the scientific knowledge of the manifold and various relations of the thoughtful individual man to the ever-changing world." It is this idea of humanism that led Virchow into so many politico-sociologic undertakings. And so he became great in science and citizenship.

Beginning with his study of famine and fever in Upper Silesia in 1848 and a little later in the Spessart mountains, we find that henceforth a large part of his time and literary activity is given to questions of social and hygienic nature. These investigations made clear to Virchow that he had a sociologic mission to obey. For did he not learn that an essential factor in the causation of this epidemic was the miserable social condition of the people and that the only remedy was radical social reform? This he lived to see realized in his own and other countries. He became one of the foremost authorities in Europe on matters relating to public hygiene and sanitation. His efforts led to sanitary improvements in Berlin that all in all involved millions of dollars and caused a complete change in the physiognomy of the city. He wrote on military hygiene, on school hygiene, on the German household, on the best forms of exercise, etc. The legislation in regard to infectious animal diseases, fisheries, etc., bear his hallmark. He himself spoke of this work as half-political and as a mixture of medicine and sociology, reiterating again and again the conviction that medicine and political legislation must be brought into the closest relationship if practical medicine is to exercise the influence it should upon important problems in the life of the people. The present system of hospitals and institutions of allied nature for which Berlin is noted is further permanent proof of his constructive activities. He helped to found, and lectured to, workingmen's societies.

Few, if any, scientific medical men have received so many demonstrations in compliment of their achievements and winning personality as Rudolf Virchow. His seventieth birthday was celebrated by the publication of three large volumes of original research by fifty-four of the most prominent medical investigators, most of them being former assistants. Virchow was a regular attendant upon numerous medical and other scientific societies and congresses. For a long period of years he succeeded himself as president of the Berliner medicinische Gessellschaft. At nearly every meeting of the International Medical Congress he was chosen to deliver one of the general addresses and his appearance always caused an outburst of spontaneous applause. He refused to return his French decorations and orders, pleading that science is catholic and knows no racial or geographic bounds. In Berlin, Würzburg and Nürnburg are streets bearing his name. He was honorary member of learned societies throughout the world. These demonstrations in his honor reached their culmination on Oct. 13, 1901, his 80th birthday. Not only in Berlin but in all scientific centers was this event appropriately celebrated. Virchow himself was the recipient of some 800 congratulatory telegraphic dispatches and addresses and diplomas without end, the medical profession of Austria alone sending him 80 such. Learned societies and corporations the world over vied with one another in showing him all possible honor. In this country several banquets were arranged at which Virchow's name and achievements were toasted and lauded. The honors heaped upon him by Germany itself through her government, the learned, political, communistic and other societies were phenomenal. The Emperor conferred upon him the highest order in Prussia. Especially touching and spontaneous were the evidences of friendship and gratitude brought by the common people from his place of birth and elsewhere. Even the children of his neighborhood joined in the celebration. But in his own words the pleasantest event to him of the whole celebration was a feast in a workingman's society of which he was a co-founder. His interest in the welfare of the masses seems to have been nearest his heart, and in reviewing the eventful week of celebration of his eightieth birthday he says: "Rely on the people and work for them and you shall not fail of reward, though the cessation of numerous activities, the disappearance of numerous persons, and the complete remodeling of public life, brings home the thought of our own passing away."

Virchow had great literary powers. His writings are characterized by stringency in thought, sharpness of vision, clearness and precision of form. He was gifted with a remarkable ability to work. In his later years it may have seemed to many that his numerous interests removed him from immediate touch with the results of the more modern investigations. When bacteriology came upon the scene he remained sceptic and reserved, and did not take part in the new researches. He appeared more as a man that felt his creative work to be done and that was content to rest upon his laurels. But it is to be remembered that he always bowed before complete and definite results, though his critical spirit never slept. "Gigantic work like that performed by him during the first twenty years can not continue for ever; one new era created can not be replaced by another by one man." His own experience in regard to investigative work is illustrated in his saying that "the silent unnoticed labor of a scientist requires more energy and greater effort than the activity of the politician, which is both noisier and more speedily appreciated." And in the end the work of *Virchow the investigator* probably will be regarded as his best and greatest. When everything else is forgotten the world will remember the investigative work of his early manhood.

> We live in deeds, not years; in thoughts, not breaths;
> In feelings, not in figures on a dial.
> We should count time by heart throbs. He most lives
> Who thinks most, feels the noblest, acts the best.

We have received a cablegram from Berlin announcing that a committee of American physicians attended Professor Virchow's funeral, September 9, who presented an exquisite wreath of Easter lilies and maidenhair ferns from their countrymen practicing and studying in Berlin, with an inscription testifying to the high esteem of the medical profession of the United States for the world-renowned pathologist, Rudolf Virchow.

St. George Williamson Teackle, M.D., of Baltimore, died suddenly at his summer home near that city, August 30, from angina pectoris, aged 52. He was graduated from the University of Maryland in 1870, then spent two years at the Blackwell's Island Hospital, N. Y. He settled in Baltimore in 1872, and was physician of the Baltimore General Dispensary from 1872 to 1876, visiting physician to Bayview Asylum from 1879 to 1881 and state vaccine agent of Maryland from 1882 to 1897.

Lucretius D. Ross, M.D. Castleton (Vt.) Medical College, 1857, a prominent member of the Vermont State Medical Society and some-time president of the Rutland County Medical Society, who served during the Civil war as surgeon of the Fourteenth Vermont Volunteer Infantry, died at his home in

Pulteney, Vt., August 25, after an invalidism of nine years due to paralysis, aged 75.

William Faithful Hendrickson, M.D. Johns Hopkins University, Baltimore, 1900, instructor in pathology in the University of Pennsylvania, died at the Union Protestant Infirmary, Baltimore, from meningitis, August 21, after an illness of three months, aged 26. He was taken ill in June with broncho-pneumonia, for which he sought relief in vain in the Adirondack Mountains.

John Henry Longnecker, M.D. Jefferson Medical College, Philadelphia, 1846, a veteran of the Civil war, in which he served as surgeon of the One Hundred and Twenty-ninth Pennsylvania Volunteers and assistant surgeon at the Annapolis Hospital, and a retired practitioner of New York, died at is home in Islip, Long Island, N. Y., August 19, aged 80.

Rufus W. Griswold, M.D. College of Physicians and Surgeons, New York, 1854, a prominent physician of Connecticut, member of the state medical society, and twice president of Hartford County Medical Society, died at his home in Rocky Hill, August 17, from heart disease, after an illness of nearly two months, aged 77.

Francis W. Chadbourne, M.D. Medical School of Maine, Brunswick, 1869, one of the oldest practitioners of Lowell, Mass., a member of the Massachusetts and Middlesex North medical societies and a member of the staff of the Corporation and Lowell General hospitals, died suddenly at his home, August 21, aged 59.

William McD. Struble, M.D. University of Pennsylvania, Philadelphia, 1885, president of the board of health of Trenton, N. J., died at his residence in that city, August 28, from paralysis, aged 42. He had served as president of the Trenton Medical Association and of the Mercer County Medical Society.

George A. Bodamer, M.D. University of Pennsylvania, Philadelphia, 1884, a member of the American Medical Association, for a time chief resident physician of the German Hospital, Philadelphia, but of late years in private practice, died at his home in Philadelphia, August 20, aged 43.

George G. Verbryck, M.D. Long Island College Hospital, Brooklyn, N. Y., 1884, died at his residence in Salt Lake City, from typhoid fever, August 21, after an illness of five weeks, aged 43. The Salt Lake County Medical Society met, August 23, and adopted resolutions of respect and sympathy.

Thomas A. Mason, M.D. Medical College of Indiana, Indianapolis, 1875, died from heart disease at his home in Terre Haute, Ind., August 28, aged 58. The Vigo County Medical Society, at a special meeting held August 28, passed resolutions of condolence and regrets.

James L. Morrow, M.D. Medical College of Ohio, Cincinnati, 1853, a prominent practitioner of Delphi, Ind., who served in the Civil war as assistant surgeon and surgeon of the Seventy-second Indiana Volunteer Infantry, died at his home, August 15, aged 75.

Ralph H. Fetty, M.D. Baltimore University School of Medicine, 1888, formerly assistant superintendent of the State Hospital at Weston, W. Va., and thereafter a practitioner of Camden, died suddenly at Clarksburg, W. Va., August 24, aged 49.

James Pierce, M.D. New York University, 1871, a member of the Lawrence Medical Club and of the Massachusetts Medical Society, died at his home in Methuen, Mass., where he had practiced for more than twenty-five years, August 25, aged 54.

Joseph M. McManigal, M.D. College of Physicians and Surgeons, Baltimore, 1883, for the last four years physician at the Allegheny City Home, died suddenly at his residence in Hoboken, Pa., from heart disease, August 29, aged 39.

Thomas H. Phillips, M.D. Jefferson Medical College, Philadelphia, 1864, a surgeon in the Army during the Civil war, and family physician to the late President McKinley, died suddenly at his home in Canton, Ohio, August 30, aged 67.

John D. Briggs, M.D. Detroit (Mich.) Medical College, 1871, for more than 25 years a practitioner of Williamson, N. Y., and coroner of Wayne County for three years, died at the Rochester City Hospital, August 23, aged 66.

Archibald B. Lang, M.D. New York University, 1884, for 17 years a resident of Sault Ste. Marie, Mich., and in 1893 mayor of that city, died at his home, August 24. He was a member of the American Medical Association.

W. W. Gaither, M.D. Jefferson Medical College, Philadelphia, 1860, surgeon of the Twenty-sixth North Carolina Infantry, C. S. A., died at his home in Shallotte, Brunswick County, N. C., August 18, aged about 70.

Matthias S. Wheeler, M.D. Rush Medical College, Chicago, 1868, one of the oldest physicians of Sangamon County, Ill., died at his home in Auburn, August 27, from cancer of the stomach, after a long illness, aged 63.

Robert O. Andrews, M.D. Bellevue Hospital Medical College, New York, 1886, a prominent practitioner of East Liverpool, Ohio, and a member of the American Medical Association, died at his home, August 25, aged 65.

George B. Nichols, M.D. Rush Medical College, Chicago, 1883, a prominent member of the Vermont State Medical Society, died at his home in Barre, from Bright's disease, August 25, aged 63.

Adam O. Miller, M.D. Marion-Sims College of Medicine, St. Louis, 1891, after a prolonged debauch, shot and killed his wife and then committed suicide by taking tincture of opium August 31, aged 35.

George D. Perkins, M.D. University of Michigan, Ann Arbor, 1897, a member of the laboratory staff of Parke, Davis & Co., Detroit, died at his home in that city, September 2, from kidney disease.

Richard Oliver, M.R.C.S. Eng., and L.S.A., 1861, for nearly fifteen years resident physician at the leper settlement at Molokai, Hawaii, died at his residence in Waikiki, August 12, aged 63.

Francis E. Rosenkrans, M.D. Cincinnati College of Medicine and Surgery, 1875, died at his home in Grand Rapids, Mich., August 22, from cancer, after an illness of two months, aged 61.

J. A. Mignault, M.D. Harvard University Medical School, Boston, 1844, for many years coroner of the district of Terrebonne, Quebec, died at his home in St. Benoit recently, aged 83.

Albert E. Evans, M.D. Medical College of Ohio, Cincinnati, 1883, formerly of Chicago, died at the Dayton State Hospital, from paresis, August 28, after a long illness, aged 43.

Carl Patterson, M.D. Beaumont Hospital Medical College, 1898, a young practitioner of Denison, Texas, was drowned while swimming in Red River, August 24, aged 26.

Marion Wilkerson, M.D. Medical College of Ohio, Cincinnati, 1853, for many years a practitioner of Sabina, Ohio, died at the Soldier's Home, Dayton, August 19, aged 83.

Darwin Potter, M.D. Geneva (N. Y.) Medical College, 1860, a prominent physician of Rochester, N. Y., died suddenly at Lily Dale, N. Y., from apoplexy, August 17.

John R. Little, M.D. University of South Carolina, Columbia, 1859, died at his home in Spartanburg, S. C., August 18, after a protracted illness, aged 70.

William B. Swan, M.D., secretary of the Kansas State Board of Health, Topeka, was drowned while boating near Ludington, Mich., September 1.

Mortimer V. Wilkie, M.D. Columbia University, New York, died at his home in Cuddebackville, N. Y., August 31, after a short illness, aged 45.

P. Germain Laberge, M.D. Laval University, Quebec, 1891, died at his home in Manchester, N. H., from heart disease, August 23, aged 38.

Edwin Pratt, M.D., a retired physician of Bellefontaine, Ohio, died at his home in that city from chronic lung disease, August 25, aged 75.

B. J. Sapp, M.D., a retired practitioner of Kernersville, N. C., died at his home in that place after a long illness, August 28, aged 66.

Roy H. Hawkes, M.D. College of Physicians and Surgeons, New York, 1893, died recently from pneumonia at his home in New York City.

William D. Barber, M.D. Kansas City Medical College, 1887, a practitioner of Chicago, died at East Las Vegas, N. M., August 23.

John Simison, M.D. Cincinnati Medical College, 1850, died at his home in Romney, Ind., August 19, from typhoid fever, aged 78.

James M. Sellers, M.D. Tulane University, New Orleans, 1875, died at his home in Edna, Texas, August 24, after a long illness.

Thomas Hickey, M.D. Jefferson Medical College, Philadelphia, 1894, died at Shamokin, Pa., August 6, from tuberculosis.

H. M. Talley, M.D. Vanderbilt University, Nashville, Tenn., 1857, died at Valdosta, Ga., September 1, from apoplexy.

Ebenezer H. Thurston, M.D. University of Buffalo, 1865, died at his home in Chicago, August 25, aged 64.

J. Warren Howard, M.D., died at his home in St. Paul, Ind., August 29, from heart disease, aged 63.

Thomas C. Osborn, M.D., died at his home in Cleburne, Texas, August 20, aged 85.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

COINCIDENCE—ITS PROPER VALUE IN DIAGNOSIS.

ST. LOUIS, Aug. 25, 1902.

To the Editor:—I think it would serve a useful purpose if you invited contributions to your columns concerning coincidences, and to express more clearly what I mean I will cite two cases from my own practice:

A man came to me complaining of pain in the right testis of two days' duration which he attributed to the testes having been suddenly squeezed between the left thigh and a bunch of keys in his right trouser pocket in the act of crossing his legs. No pain had ever been experienced in the part before. Examination disclosed advanced tubercular epididymitis.

A boy was brought to me supposed to be suffering from nervous shock, having been knocked over some days previously by a drunken man in the street. Routine examination commencing with the throat discovered diphtheria.

Here is a factor, then, which, as far as I know, has never been touched on in the treatises on diagnosis—coincidence. There is no escape from being obliged to give it due consideration in our mental summing-up of the case unless we examine our patients from a veterinary point of view—perhaps a better way—finding out what we can by our own unaided industry. The consideration of the particular value to be attached to coincidence would lead me further than it is my intention to trespass on your valuablo space. Recitation of cases from others would not only be highly instructive but also most interesting and would furnish a moral to adorn many a clinical tale. Yours faithfully,

J. R. CLEMENS.

ETHICS IN SUCCEEDING ANOTHER PHYSICIAN.

LAWRENCE, MASS, Aug. 28, 1902.

To the Editor:—Kindly decide this question of ethics, and oblige two members of the profession in good standing and others who may meet with a parallel case: A physician has been in attendance on a patient ten days (after miscarriage) and has made morning visit and is to call during afternoon. Meanwhile the family desires to dispense with his services—he has been paid in full for services rendered—they telephone for another physician who has no knowlidge of the circumstances until he arrives at the bedside. When he is informed that a fellow practitioner is expected to call he refuses to accept the case or give an opinion and rises to depart. The patient and her husband state that they desire his services and shall not further employ the other physician. He explains his position and ends by refusing to have anything to do with the case unless in consultation with the other physician. The family refuse to have the other physician. "Then, you must notify your attending physician not to call any more," said the second physician, "before I shall be at liberty to attend this patient." The husband goes to the physician's office and leaves notice that his services are no longer required. The husband returns and states that he was unable to see the physician personally but left word at his office for him not to call. Meanwhile, the patient suffers considerable pain. The second then accepts the case, makes examination, gives opinion and outlines treatment. He in no way solicits patronage, and neither criticised nor commented on the previous conduct of the case. Has he (the second physician) broken a rule of ethics or been guilty of conduct in any way discourteous to his fellow practitioner? Very truly yours,

JOHN T. CAHILL.

ANS.—As stated there seems to be no violation whatever of the Code of Ethics. See Art. V, Sec. 4.

MALARIA WITH ANASARCA.

MOSHER, ARK., Aug. 27, 1902.

To the Editor:—Since locating in Arkansas I have encountered a peculiar condition that the text-books fail to describe. It is an anasarca associated with or dependent on acute malarial infection. It commences with a chill and is followed by fever and sweating. About the second or third day the swelling begins and involves the whole body. The fever is now slight or wanting. The thoracic and abdominal viscera are apparently normal except a slightly enlarged spleen. Urine analysis: sp. gr. 1020, acid, amber, no sugar, no albumin, no casts. Pot. ferio cyanid, heat and nitric acid tests for albumin were carefully used. Blood examination revealed many plasmodia malaria—crescents in all cases. After giving quinin for a week or nine days a speedy convalescence ensued. The patients ranged in age from four to fifty-two years and none had had malaria for years. I would be gratified for any information as to where I can find literature on the disease or of anyone with like experience. F. L. MORSE, M.D.

WOUNDS OF THE ABDOMEN.

ALBERT, W. VA., Sept. 4, 1902.

To the Editor:—Kindly answer the following questions through THE JOURNAL: 1. Given a patient with one or several stab wounds in the abdomen, what, in your opinion, is the very shortest time in which death could result from peritonitis? 2. What is the latest treatment advised for gunshot wounds of the abdomen—wounds inflicted with the ordinary weapons? A. P. BUTT.

ANS.—1. Shock and hemorrhage can not be excluded, but when they are not dominant factors, peritonitis may result in death in 24 to 30 hours. 2. For the expert: if there is presumptive evidence of involvement of abdominal viscera, immediate operation, repair of damage and washing out of the abdominal cavity. For the ordinary practitioner: if there is strong evidence of visceral involvement, immediate operation is indicated; if not, expectant treatment.

Correspondence.

Concerning Indexes of Medical Journals.

DILLON, MONT., Sept. 4, 1902.

To the Editor:—Regarding the editorial note "Concerning Indexes of Medical Journals" in THE JOURNAL of August 30: The index furnished by THE JOURNAL is indeed a valuable addition to our comfort, but even such an index can not attain perfection, from its necessarily discontinuous publication.

I would suggest my plan of using card index. It is this: Soon after receipt and reading of each periodical, its contents are indexed on cards and a check mark placed on the journal to show that it is ready to be filed away until the volume is complete. Each periodical is given a number, which accompanies the volume numbers, for example: THE JOURNAL A. M. A. is No. 1. Then an article appearing in vol 39, page 496, on "Indexes of Medical Journals" is placed on the card devoted to "Indexing" as "1, 39-496, medical journals," meaning: THE JOURNAL A. M. A., vol. 39, page 496, indexing of *medical journals.*

I subscribe to only six journals, but in six years this amounts to 72 volumes and everything considered worth preserving is indexed at one place (in two drawers of my office desk). Thus, in a very few moments I am able to find every article on a given subject in any of the 72 volumes, and without rising from my desk. The work of indexing amounts to only a few minutes each week and the short time spent on it I consider most profitably employed. M. A. WALKER, M.D.

Priority in Perineum Repair Technic.

ATLANTA, GA., Aug. 19, 1902.

To the Editor:—In THE JOURNAL of the 16th inst. is a communication from Dr. Marcy of Boston in which he calls attention to these articles of his, viz.: Transactions of the American Association of Obstetricians and Gynecologists, September 1888, "The Perineum; Its Anatomy, Physiology and Methods of Restoration After Injury"; also "The Reconstruction of the Pelvic Structures in Woman," American Association of Obstetricians and Gynecologists, 1892; also "The Reconstruction of the Pelvic Structures Incident to Lesions of Perineum," THE JOURNAL American Medical Association, October 21, 1899. He then says: "Here will be found all the essentials of Dr. Noble's interesting article on 'A New Operation for Complete Laceration of the Perineum.'"

In reply to this most extraordinary claim I will state that the chief feature of my operation is *elimination of the danger of infection from the rectum* by dissecting the lower anterior portion of the rectum free from the vagina and drawing the uninjured portion of the anterior wall of the rectum down through and external to the anus, making an unbroken septum between the rectum and vagina, virtually converting the co plete tear into an incomplete laceration. [illegible] rcy dc [illegible] attempt to do this; his operation is the by a Marcy stitch and safety pins. He distinctly describes suturing of the rectal tear and folding of the rectal mucosa closely together, thus showing that his operation in nowise approaches mine. In my operation for incomplete tears I show that approximation of the fascia layer to layer is the feature aimed at. Nowhere in his articles does he show that he attempts this, but enlarges on buried animal sutures. The absolute want of similarity between his and my operations makes his claims most extraordinary and unwarrantable.

I, as most surgeons of this day, make no claim of buried sutures, and as they have been in use so many years in this country and in Europe, it is unnecessary to mention the name of the man who first used them. Should Dr. Marcy lay claim to everything that buried animal sutures are used in he will have a self-invested interest in a large part of the world's surgery. The buried suture is the only thing common to his and my operation for incomplete tears, and in my new operation for complete laceration it does better.

If Dr. Marcy will carefully read my paper he will see his mistake. Respectfully, Geo. H. Noble.

Accomplishments of the Finsen Apparatus in Lupus.

Brooklyn, Aug. 25, 1902.

Prof. N. R. Finsen has kindly given me photographs of one of his most interesting cases, showing the condition of the patient before (Fig. 1) and after (Fig. 2) his use of the chemical rays of light, with the tube devised by him. Fig. 3 shows a Finsen tube in position, with a patient under treatment for lupus of the nose. This is a tube which I purchased when in Copenhagen, and which I am now using with a very satisfactory degree of success.

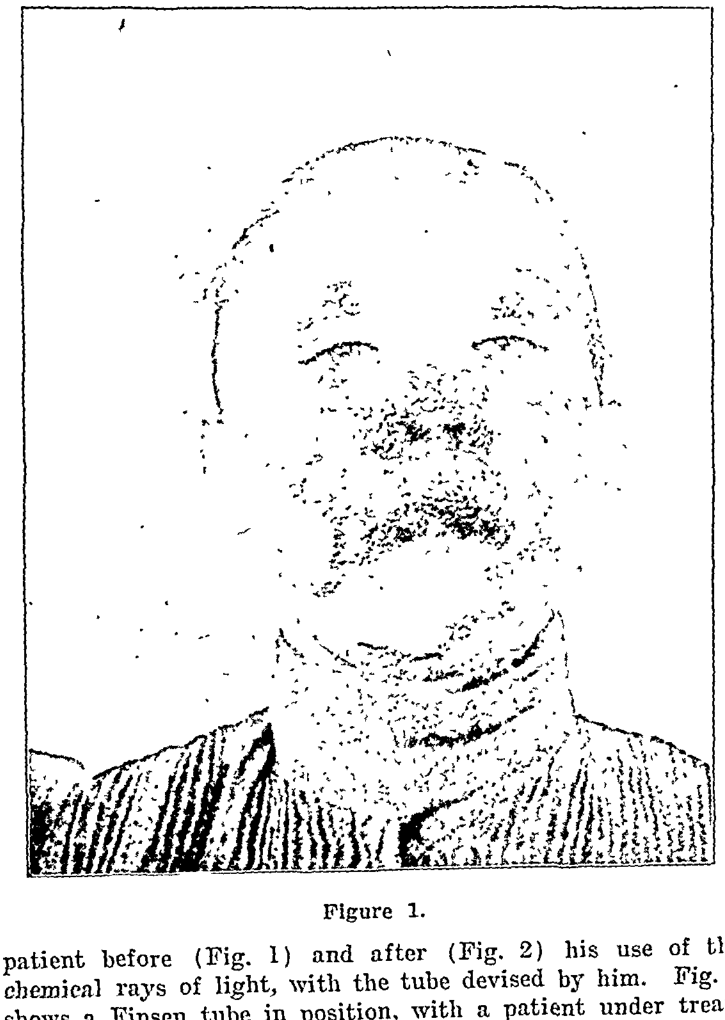


Figure 1.

The method is being used successfully in Russia, Greece and Great Britain under the patronage of the governments of these countries, also by many private physicians all over Europe. In this country there are as yet very few men working in this department. I suppose there would be more if it were not for the expense of installation and maintenance. Fig. 4 shows the new lamp devised by Dr. Bang, one of Prof. Finsen's assistants. The beauty of this is that it does not require any carbons. This is the first of this make of lamp that has reached this country, and it is certainly very ingenious in its construction. It will do excellent work but covers a smaller space than the light from the arc lamp. The amount of current consumed is so small in comparison with

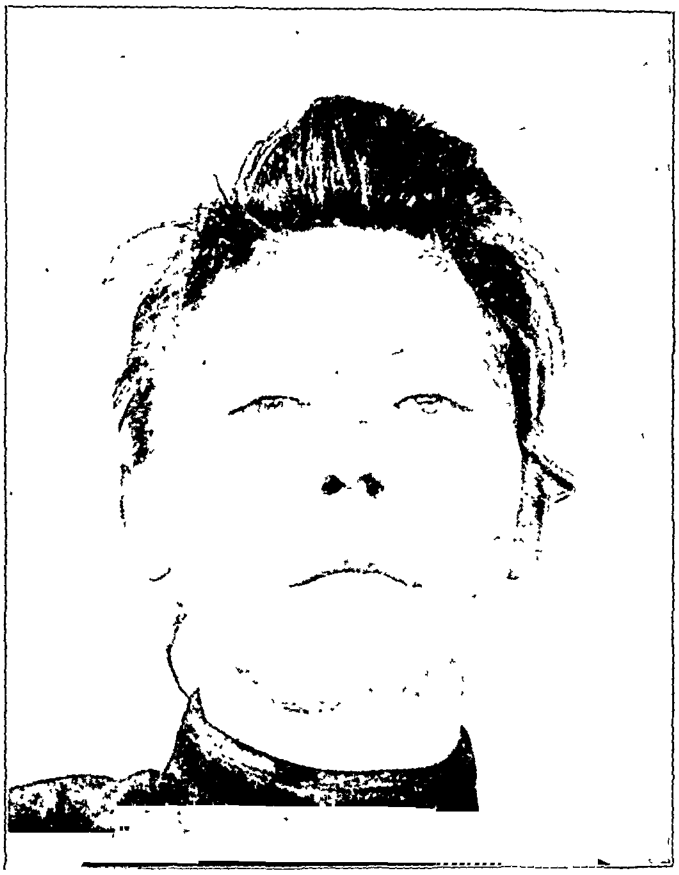


Figure 2.

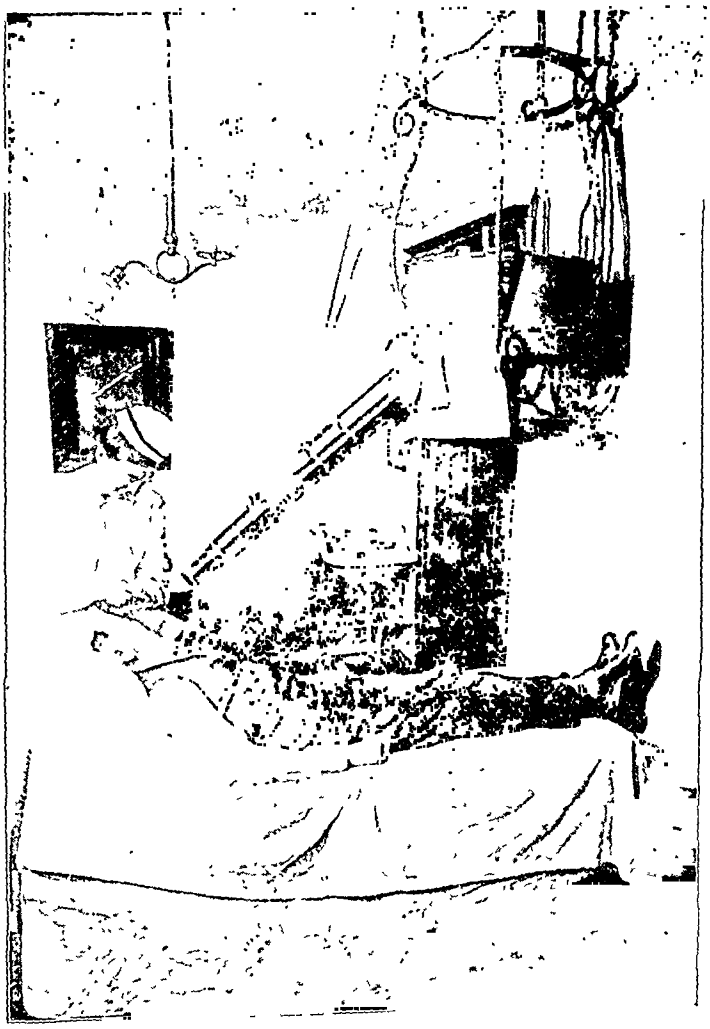


Figure 3.

the older lamp as to make it a question whether in time it may not replace the older Finsen apparatus

I trust these photographs may prove interesting, and induce more of the profession to undertake the trial of this interesting

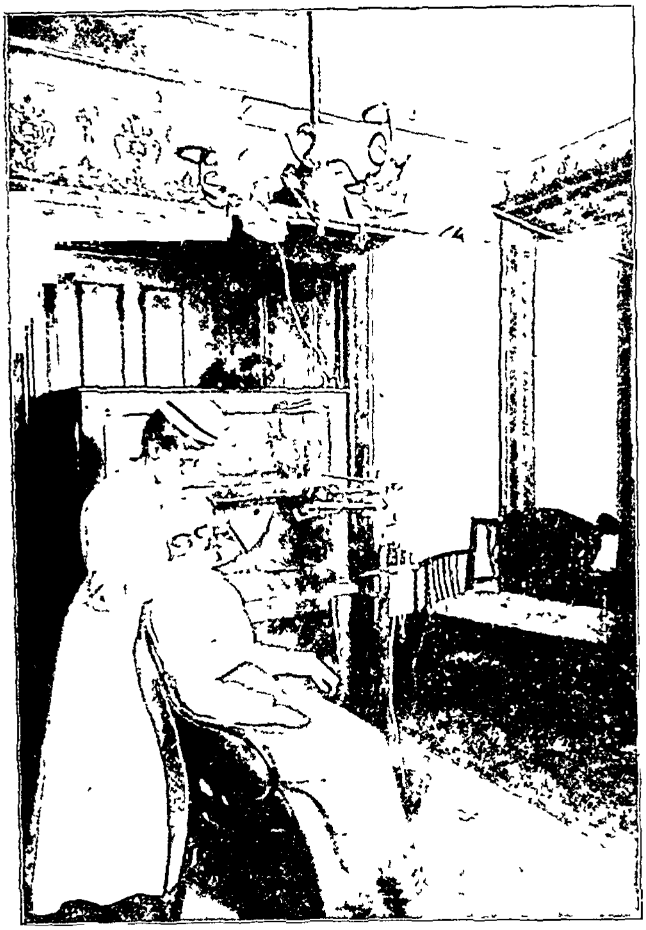


Figure 4

method of treatment of a class of diseases heretofore considered incurable George G. Hopkins, A.M., M D

350 Washington Avenue

New Instruments.

COMBINATION SURGICAL INSTRUMENT

HENRY EMERSON WETHERILL, M.D.
Surgeon Naval Reserve, Pennsylvania.
PHILADELPHIA.

THE OBJECTS OF THE INSTRUMENT.

The purpose of this instrument is to combine such surgical *instruments together that are ordinarily* used by the physician, nurse, medical student and others that may from time to time *need a few surgical tools. So* far as possible the great danger of a combination instrument, that is to say one instrument interfering with the effectiveness of another, has been overcome. The instrument is not intended to supplant ordinary instruments as in the surgeon's pocket case, but it is intended to be used where one instrument at a time is desired. It is meant particularly for emergencies, as it is an instrument that one is likely to have with him at all times and in this respect not like the pocket case which sooner or later is apt to be at home when the emergency occurs.

By the use of a small and a large form of this field instrument one is able to do most any *little* operation. After several years' experience with it, in the army, in practice, on expeditions, *here and there, it has* proved itself useful, for there are many times when you can use at least one part of the instrument. It is true *that it* would be about as difficult to pick up something and cut it off by the use of forceps and scissors, as for a dog to catch his own tail. But by borrowing another man's instrument, as might be done by a hospital corps man in the army, one could readily overcome this difficulty, providing he had but one instrument, and he would hardly need more than two for minor surgery.

The instrument consisting of but two pieces is not likely to become lost. The parts lock together and can be carried in the pocket or in a chamois case on the belt.

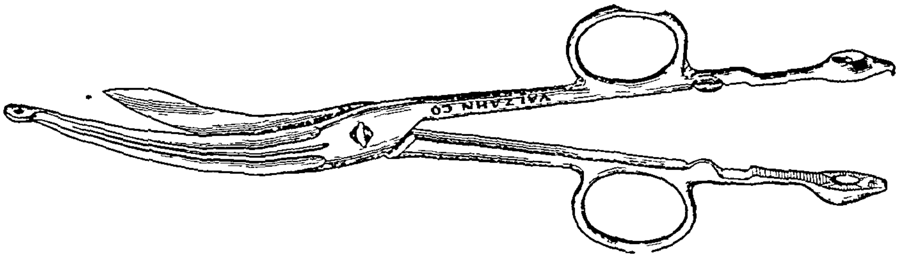
The special use for this instrument seems to be where you can not carry a *full case of instruments and* where it will do any small thing that may be required of it at that time.

THE USES OF THE INSTRUMENT.

Although the *ingenuity of the operator* will suggest many little uses to which he can from time to time put this instrument, the following are mentioned as some of the more important ones. As scissors it will give a straight or curved cut, and will work as a bandage scissors, and as scissors curved on the flat or vertical. The grooved director ends near the eyed probe end, which in a way may be used as a dry dissector. The knife blade has a curved belly and can be used as a bistoury as well as a scalpel; and when the instrument is wet with blood the loop of the scissors blade fits the third finger of the right hand and gives one a good grasp on the instrument. *The knife in this position is held securely and is well* balanced and in a good position for cutting. This blade alone held in this *manner* would *enable a* man to somewhat protect himself on the field. When the instrument is partly closed, the belly of the scalpel projects somewhat like the sharp edge of a hernia knife. The *sharp point* and *edge* are completely protected when the instrument is closed, and when open and the hemostat end of the instrument is being used, are out of the way of the wrist.

There is a long clamp between the handles of the scissors. The hemostat is handy *to pick up cut* dressings—cut with the scissors. This is readily done with one hand and the other hand does not have to be used to hold a pair of spring forceps. The loops of the instrument stay on the fingers when the hemostat portion is used as a dressing forceps. Needles of various kinds may be held by *the hemostat, and in the concavity* of the instrument a shot will rest when the needle hole running across the hemostat is used as a shot threader. A funnel-shaped opening facilitates the centering of the silkworm gut or other *material.* The needle, however, does not wabble on account of this enlargement. Between the *two rat teeth* on the upper blade a needle can be held firmly as would be desirable in teasing out fibers under the microscope.

A sharp and dull curette, one side sharp, the other blunt; rests on the top of the hemostat so as not to interfere with a ligature. On the under side *is a file* arrangement, useful in vaccination. It can readily be cleaned. There are practically no hollow corners, so the *instrument may readily be* sterilized.



There were some difficulties in producing this instrument, such as the *making* of a satisfactory lock, and a pair of hemostats that would work nicely. In offering this instrument for trial by the profession I do so [illegible] stating that it will do everything, but that I have found it useful to have with me, as it will do many of the little things one has to do every day.

3734 Walnut St.

A THIMBLE PLEXIMETER.

W. C. LANGHORST, M.D.
CHICAGO.

I have devised a pleximeter that will overcome the difficulties and complexities of the present method of percussion by making it possible not to require more than the end of the finger to be used as the hammer proper, the balance of the finger acting with the hand and wrist. In order to do this the end of the finger must be properly weighted. The amount of weight should vary with one's proficiency in the use of the present method, the less experienced the greater the weight and vice versa. The pleximeter is preferably made of metal, thimble-shaped, with a gum tip which must be of an exact size for each pleximeter; the size and thickness of this tip should vary with the weight principally.

The gum tip serves two important purposes—it protects the finger struck, and it causes the finger to which it is attached to rebound more quickly, therefore a more resonant and clear tone results. With a little practice the advantage over the unaided finger method or other methods where the force or rather resistance of the blow is not directly transmitted to the percussion finger, is readily brought out. The blow properly struck can be executed more quickly either lightly or heavily, and the tones elicited are correspondingly sharp and clear, loudness depending on the force of the blow. This method does not lessen the sense of resistance felt by the percussing finger; if there is any difference the force is intensified by the gum tip.

12 Selden Street.

Book Notices.

THE OPERATIONS OF SURGERY. By W. H. A. Jacobson, M.Ch. Oxon., F.R.C.S., Surgeon to Guy's Hospital; and F. J. Stewart, M.S. London, F.R.C.S., Assistant Surgeon Guy's Hospital, and to the Hospital for Sick Children. Fourth Edition, Revised, Enlarged and Improved. 550 Illustrations. Two Volumes: Volume I—Operations on the Upper Extremity; Operations on the Head and Neck; Operations on the Thorax. Volume II—Operations on the Abdomen; Operations on the Lower Extremity; Operations on the Vertebral Column. Cloth. Pp. 402. Price, $10.00. Philadelphia: P. Blakiston's Son & Co. 1902.

It is but a short time since the third edition of this work was reviewed, and it is now with pleasure that we announce the fourth edition. One may judge of the growth which the work has undergone since its first edition by the fact that the first edition contained only 199 illustrations, while in the fourth edition are 550.

The authors state that the work was never intended "for those of large surgical experience," but for those recently appointed on a hospital staff and for those preparing for the higher examinations. Notwithstanding the authors' modest intentions, the work is certainly one of the best that has appeared on the subject of operative surgery. It contains not only an excellent description of the technic of the various operative procedures, but an immense amount of information concerning diagnosis, indications for operation, after-treatment and results, with illustrative cases and references to the literature.

The illustrations are good and the work can be recommended to the surgeon of large experience as well as to the younger man.

A TREATISE ON DISEASES OF THE SKIN. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology, Jefferson Medical College and Woman's Medical College, Philadelphia. Handsome Octavo of 1125 Pages, with 220 Text-Illustrations, and 26 Full-page Lithographic and Half-tone Plates. Cloth. Price, $6.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Dr. Stelwagon has here produced a very handsome and valuable treatise on the general subject of skin diseases, and one that fulfills his desire to give a practical knowledge of the symptomatology, diagnosis and treatment of the affections that are likely to be met by the general practitioner. In looking over the book we find very little of importance that is omitted and a great deal that is here given in a form perhaps not better, but certainly fully as well, as in any work of its kind. The illustrations are very numerous and helpful and the descriptions are clear. The style is readable and the work seems one that to us ought to be most favorably received by the general practitioner and referred to by the dermatologic specialist. The subject in the esthetic point of view is not an attractive one, but from a medical point of view it is one that certainly has its interest to every practitioner. Skin diseases are external and open to view and yet there are probably as much diagnostic error in practice in regard to these as there is in regard to many more recondite conditions. There is, therefore, still room for works like this by eminent specialists for the general professional edification.

A MANUAL OF SURGICAL TREATMENT. By W. Watson Cheyne, M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College, London, Surgeon to King's College Hospital, etc., and F. F. Burghard, M.D. and M.S. (Lond.), F.R.C.S., Teacher of Practical Surgery in King's College, London, Surgeon to King's College Hospital, etc. In Seven Imperial Octavo Volumes, with Illustrations. Volume VI, 498 Pages with 124 Illustrations. Cloth, $5.00 net. Philadelphia and New York: Lea Brothers & Co. 1902.

It was the intention of the authors to complete this work (the previous volumes of which have already been noticed in these columns) in six volumes, but they found the sixth volume would be so large, that it seemed more desirable to them to make two volumes corresponding in size to those already issued, rather than one very large one.

Section 1, of Vol. VI treats of the affections of the tongue, floor of the mouth, pharynx, neck, esophagus, stomach and intestines. Under strictures of the esophagus we find no mention of Abbe and Dunham's excellent method of treating small strictures by means of the silk thread, a most important advance in the treatment of these very troublesome cases.

Under gastroenterostomy the advisability of attaching the loop of intestine as low down or near the great curvature as possible is not made sufficiently apparent.

The subject of appendicitis is well handled, and the volume closes with a consideration of hernia.

The same excellent standard of the previous volumes is maintained.

PRINCIPLES OF SANITARY SCIENCE AND THE PUBLIC HEALTH, with Special Reference to the Causation and Prevention of Infectious Diseases. By William T. Sedgwick, Ph.D., Professor of Biology and Lecturer on Sanitary Science and the Public Health in the Massachusetts Institute of Technology, Boston. Cloth. Pp. 368. Price, $3.00. New York: The Macmillan Co. 1902.

The present volume is, the author says, the direct outgrowth of a course of lectures on sanitary science and public health given for several years by the author, professor of biology and lecturer on sanitary science at the Massachusetts Institute of Technology, to the senior students and was prepared primarily for their use. He thinks, however, that it may have a wider utility and the material herein contained may be of value to physicians, publicists and anyone who has to do with matters of public and private sanitation. It is unnecessary to say that the chapters are representative of the best knowledge of the subject. Perhaps a little more detail might have been given to one or two matters, such as the more modern methods of sewage disposal, some of which are hardly more than alluded to. On the whole, however, it gives a vast amount of well-handled information that ought to have a wide circulation among the classes above designated. Its usefulness where the matter contained is properly studied and digested can not be denied.

THE STUDY OF THE PULSE, Arterial, Venous and Hepatic and of the Movements of the Heart. By James MacKenzie, M.D. (Edin.), Burnley. Cloth. Pp. 325. Price, $4.50. New York: The Macmillan Co. 1902.

The object of this work is to give a more or less graphic statement of certain facts of the circulation as revealed by the pulse and especially to explain certain of the symptoms of the heart's action which have not been thoroughly described heretofore or erroneously interpreted. The author has attempted to reduce to order and system a vast amount of information, and while he does not claim to have been entirely successful in his attempt, the work is without doubt a contribution to our knowledge and will clear up certain facts that are more or less puzzling. Dr. Mackenzie believes in the sphygmograph and the large number of tracings which he gives throughout the book show how much he has depended on it. He says correctly if we would use graphic records to verify observations of teachings we would gain in accuracy. The book is not one that is exactly easy reading except to those who are more or less acquainted with the physical signs of the heart, but to the cardiac or thoracic specialist it ought to be of real value as a woık of reference and study.

A Manual of Practical Anatomy. By the Late Professor Alfred W. Hughes, M.B., M.C., Edin., F.R.C.S. Edin., F.R.C.S. Eng. Professor of Anatomy, King's College. Edited and Completed by Arthur Keight, M.D. Aberd., F.R.C.S. Eng., Lecturer on Anatomy London Hospital Medical College. In Three Parts. Part II. The Abdomen and Thorax. Illustrated by 4 Colored Plates and 151 Figures in the Text. Cloth. Pp. 308. Price, $300. Philadelphia: P. Blakiston's Son & Co. 1902.

The second part of this manual deals with the anatomy of the abdomen and thorax. It contains four colored plates and one hundred and fifty-one figures in the text. Most of the latter are copied from other text-books on anatomy. Throughout the book very little reference is made to fetal remains. On page 83 the appendix is said to have an average length of from four to seven inches. This is much too long, at least according to the experience of American surgeons and anatomists. The supports of the kidneys are well elucidated, and Figs. 178 and 179 show very clearly the anatomic relations and the supports themselves. Hardly enough emphasis is placed on the relation of the axis of the uterus to that of the vagina. In the thorax the importance of landmarks are pointed out, but are not well illustrated. Part II throughout is rather condensed considering the importance of the parts of the body under consideration.

The Theory and Practice of Infant Feeding, with Notes on Development. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children at the New York Post-Graduate Medical School and Hospital. With Numerous Illustrations. Cloth. Pp. 325. Price, $2.25. New York: Wm. Wood & Co. 1902.

Dr. Chapin's contributions to this subject in periodical medical literature are well known and this volume from his pen deserves a cordial reception. The subject is one that is so much to the front at the present time that there is little reason for denying that a work of this kind meets a want. The subject is very thoroughly and clearly treated, the book is well arranged and made up and is throughout a convenient manual on the subject. The methods of preserving, examining, Pasteurizing, and sterilizing milk are given, as well as the methods for its modification for artificial infant feeding. The different special conditions which must be met in the diet, changes for different years, etc., are all considered and in the concluding section of the work the rules for calculating the growth of infants and their measurements are given in such a way as to be readily intelligible. The book is a convenient manual for reference that every practitioner should have.

Massage and the Original Swedish Movements. Their Application to Various Diseases of the Body. Lectures Before the Training Schools for Nurses Connected with the Hospital of the University of Pennsylvania, German Hospital, Woman's Hospital, Philadelphia Lying-in Charity Hospital, the Philadelphia Polyclinic and College for Graduates in Medicine, and the Kensington Hospital for Women, of Philadelphia. By Kurre W. Ostrom, from the Royal University of Upsala, Sweden. Fifth Edition, Revised and Enlarged, with 115 Illustrations. Cloth. Pp. 181. Price, $1.00. Philadelphia: P. Blakiston's Son & Co. 1902.

This is the fifth edition, the first having appeared within about twelve years. It contains considerable new material over the fourth edition and many original practical points scattered throughout the text. It is a convenient concise manual of massage and as such should find favor with the profession.

Clinical Lectures on Neurasthenia. By Thomas D. Savill, M.D., Physician to the West-End Hospital for Diseases of the Nervous System. London. Second Edition. Cloth. Pp. 171. Price, $1.50 net. New York: Wm. Wood & Co. 1902.

The first edition of this work has been already noticed in The Journal and the favorable opinion there expressed in regard to it need not be repeated. The present edition has been to some extent revised and new illustrative cases added, certain parts omitted and others changed to meet the wider experience of the author and the developments of our knowledge.

Association News.

New Members.

The following is a list of new members for the month of August:

ALABAMA.
Sadler, J. M., Montgomery.

ARIZONA.
Seton, W. H., Phœnix.

CALIFORNIA.
Beckett, W. W., Los Angeles.

COLORADO.
Walbrach, C. E., Denver.
Keyser, P. H., Boulder.
Pershing, H. T., Denver.

CONNECTICUT.
Hungerford, H. E., Waterbury.
Freney, J. D., Waterbury.
Pierson, Sam'l, Stamford.

ILLINOIS.
Williams, A. L., Vandalia.
Pickels, W. H., Coal City.
Stericker, G. F., Springfield.
Culbertson, Carey, Piper City.
Wyatt, J. T., Eureka.
Churchill, A. H., Oswego.

INDIANA.
Leslie, G. M., Ft. Wayne.
Huff, O. N., Fountain City.

INDIAN TERRITORY.
Graves, W. C., Hartshorne.

IOWA.
Torney, S. J., Staceyville.
Lowry, J. D., Ft. Dodge.

KANSAS.
Johnston, G. F., Lakin.

KENTUCKY.
Mansfield, C. D., Stanton.

LOUISIANA.
Maes, Urban, New Orleans.
Adams, I. N., Olla.
Brady, C. M., New Orleans.
Dupaquier, E. M., New Orleans.
Fenner, E. D., New Orleans.
Lazard, Jules, New Orleans.
Terrett, B. A., Natchitoches.
Callan, John, New Orleans.

MASSACHUSETTS.
Nichols, E. H., Boston.
Dwight, H. L., New Bedford.
Faulkner, W. E., Boston.

MICHIGAN.
Evans, Newton, Battle Creek.
Benjamin, A., Saginaw.
Wetherbee, C., Jones.
Martindale, E. Arthur, Jackson.
Wall, W. Jocelyn, Cash.

MINNESOTA.
Linjer, O. E., Minneapolis.
Petersen, J. R., Willmar.

NEBRASKA.
Ralph, J. B., Omaha.
Bixby, Jos., Geneva.
Lemere, H. B., Omaha.
Nielsen, Morris, Belden.

NEW HAMPSHIRE.
Morgan, G. P., Dover.

NEW JERSEY.
Richards, J. W., Ft. Mott, Salem.

NEW YORK.
Bailey, Theodorus, New York City.
Kirkendall, J. S., Ithaca.
Robertson, Frank W., Elmira.
Dunham, S. A., Buffalo.

OHIO.
Tucker, E. D., Toledo.
Carter, E. P., Cleveland.

OREGON.
Johnson, A. H., Portland.
Beers, H. E., Waco.

OKLAHOMA.
Robinson, O. T., Hydro.
McComas, J. M., Elk City.

PENNSYLVANIA.
Allen, A. R., Carlisle.
Denney, Wm., Washington.
Zerner, H. E., New Castle.

SOUTH DAKOTA.
Killen, V. R., Nemo.
Waldron, P. J., Rapid City.

TEXAS.
Dyer, U. E. G., Star.
Moore, T. E., San Antonio.

VIRGINIA.
Moran, M. M., Pinners.

WASHINGTON.
Bartley, J. H., Cle Elum.

WISCONSIN.
Meyer, Edw., Brillion.
Ehlert, E. H., Hartford.

Societies.

COMING MEETINGS.

Medical Society of the State of Pennsylvania, Allentown. Sept. 16-18, 1902.

American Association of Obstetricians and Gynecologists, Washington, D. C., Sept. 16 18, 1902.

Medical Society of the Missouri Valley, Sioux City, Iowa, Sept. 18, 1902.

American Dermatological Association, Boston, Sept. 18-20, 1902.

American Academy of Railway Surgeons, Kansas City, Mo., Oct. 2-3, 1902.

Medical Association of District of Columbia, Washington, Oct. 7, 1902.

Idaho State Medical Society, Moscow, Oct. 9-10, 1902.

Vermont State Medical Society, Burlington, Oct. 9-10, 1902.

Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

Medical Society of the State of Pennsylvania.—This society will hold its annual meeting at Allentown, September 16, 17 and 18.

Medical Society of Virginia.—This society will hold its annual meeting at Newport News, September 23, 24 and 25, under the presidency of Dr. Richard S. Martin, Stuart.

McLean County (Ill.) Medical Society.—This society has issued a very neat program for the year 1902-1903, containing a roster of its members, officers and committees, and the topics to be discussed at each meeting throughout the year.

American Academy of Railway Surgeons.—The annual session of this body will be held at the Midland Hotel, Kansas City, Mo., October 2 and 3, under the presidency of Dr. August F. Jonas, Omaha, Neb. Dr. John W. Perkins, Kansas City, is chairman of the committee of arrangements.

Reading (Pa.) Medical Association.—At the annual meeting of this association, August 25, Dr. Clarence M. Kurtz was elected president; Dr. Irvin H. Hartman, vice-president; Dr. Louis L. Thompson, secretary; Dr. Oan J. Thompson, treasurer, and Dr. S. Banks Taylor, curator.

Jessamine (Ky.) Medical Society.—The physicians of Jessamine County met at Nicholasville recently and organized this Society, with Dr. Charles Mann, Nicholasville, president; Dr. Hugh L. McLean, Wilmore, vice-president, and Dr. J. Atwood Van Arsdall, Nicholasville, secretary and treasurer.

Medical Protective League.—This league, which was organized in July, 1901, for the twofold purpose of advancing medical science, and of advancing the material interests of its members by protecting them from the "can-pay-but-won't" patients, met at Bradfordsville, Ky., September 2, and elected Dr. J. B. Evans, Riley, Ky., president, and Dr. George G. Thornton, Gravel Switch, Ky., secretary and treasurer.

Houghton County (Mich.) Medical Society.—The physicians of Houghton County met at Calumet, August 26, for organization. Dr. Albert I. Lawbaugh, Calumet, was made temporary chairman and Dr. James Hosking, Kearsarge, temporary secretary. The physicians of Keweenaw, Baraga and Ontonagon counties have been asked to join the society. The following officers were elected: President, Dr. Albert I. Lawbaugh, Calumet; vice-president, Dr. Joseph E. Scallon, Hancock; secretary, Dr. William K. West, Calumet, and treasurer, Dr. Edward T. Abrams, Dollar Bay.

Gallia County (Ohio) Medical Society.—The regular monthly meeting of this society was held in Gallipolis, September 2. Dr. Charles G. Parker, president, read his inaugural address, in which he urged that harmony and organization should be the watchwords of the society. Dr. Theodore L. Chadburne, resident pathologist of the Ohio Hospital for Epileptics, presented a specimen from a case of diaphragmatic hernia in which the patient, an epileptic, died unexpectedly after a few hours' suffering, from abdominal pain and distension following the ingestion of a large amount of unripe fruit. The stomach, transverse and portion of the ascending colon, all greatly distended, were found in the left thoracic cavity, protruding through a hernial ring in the diaphragm. Death was ascribed to the pressure of the distended intestinal viscera on the heart and lungs.

Therapeutics.

[*It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.*]

Tincture of Myrrh in Diphtheria.

Dr. Stroll, writing in the *Allgemeine Med. Centrl. Zeitung*, according to the *Indian Med. Record*, recommends very strongly the tincture of myrrh in diphtheria. The mixture he uses is composed as follows:

℞.	Tinct. myrrhæ	ʒi	4
	Glycerini	ʒii	8
	Aquæ destil. q. s. ad.	℥vi	180

M. Sig.: To be given every half hour or every hour during the day in teaspoonful doses.

The author states that infants under two years of age may take one teaspoonful at a dose and older children double that quantity. After all the membrane has disappeared the treatment should be continued for two or three days, the interval between the doses being increased to three hours. Usually the fever and lassitude disappear in twenty-four hours, so that a child may frequently be found within that time sitting up in bed playing. He states that there does not seem to be any need for local treatment; but in the case of older children and adults, a gargle containing 0.5 per cent. of resorcin may be employed every hour or oftener in the daytime, or where it is desired the tincture of myrrh, undiluted, may be painted over the tonsil every hour. When the larynx is involved the author uses the foregoing mixture in an inhaler or spray, to be used every half hour. The efficacy of myrrh is supposed to be in its ability to increase the phagocytic elements in the tonsils.

Caustic Treatment of Lupus.

According to an abstract in *Amer. Med.* the treatment of lupus by caustics is inferior to Finsen's method, cauterization, scarification, or the radical cure, but it may be employed when other methods can not be used. The following is Unna's formula in such cases:

℞.	Acidi salicylici		
	Sol. antimon. chloridi, āā	ʒss	2
	Creosoti		
	Ext. cannabis ind., āā	ʒi	4
	Lanolini	ʒii	8

M. Ft. unguentum. Sig.: After cocainizing the areas involved, apply the plaster with a spatula and cover with a zinc oxid plaster, allowing it to remain for forty-eight hours and then renew.

If the lupus is hard and unyielding, the tissues surrounding the nodules may be softened by means of alkaline caustics such as the following:

℞.	Pot. hydratis		
	Calcii (slaked)		
	Saponis nigri		
	Aq. destil., āā	℥i	30

M. Sig.: Apply locally.

The foregoing treatment is applicable only to lupus which is superficial.

Chronic Diarrhea.

Dr. M. Soupault in a recent communication to Societe de Ther., according to the *N. Y. Med. Jour.*, related the good effects of hydrochloric acid in idiopathic forms of diarrhea, where there is no important anatomic alteration in the intestine. The acid, according to the author, must be prescribed in full doses; small doses are useless. One or two grams should be given daily. The pure official hydrochloric acid containing 38 per cent. of the anhydrous acid is used. It may be ordered in the form of drops at the beginning of meals—ten, fifteen or twenty drops—in a glass of sweetened water or mixed with a little citron juice or the following lemonade may be used:

℞.	Acidi hydrochloric puri	ʒiss-ʒii	6-8
	Syrupi limonis	℥vi	180
	Aquæ	℥xxv	750

M. Sig.: Two to six tablespoonfuls at a dose.

Intratracheal Treatment of Tuberculosis.

Campbell, in *British Med. Jour.*, gives the following technic of intratracheal treatment of tuberculosis:

℞.	Thymol	ʒi	4
	Salol	ʒii	8
	Menthol	ʒi	4
	Glycerini	℥v	150

M. Sig.: To be injected into the trachea with an intratracheal syringe; or:

℞.	Medicinal izal	ʒiii	12
	Menthol	ʒii	8
	Glycerini	℥v	150

M. Sig.: To be used as an intratracheal injection.

The author injects from two drams to one and a half ounces into the trachea twice a day at a temperature of 140 degrees F. In some cases he employs the first formula for one week and then changes to the second formula. In some cases a weaker emulsion of izal should be used to begin with. The author states, with this treatment, that no irritation or coughing occurs. The duration of the treatment should depend on the individual case.

[Izal, according to Coblentz, consists of an emulsion containing about 30 per cent. of a new oil produced by a process employed in the manufacture of a special form of coke. It is claimed that its antiseptic power is greater than that of carbolic acid, while it is practically non-toxic.]

Baths in Diseases of the Skin.

In acute eczema, urticaria or psoriasis in children, the following formula is of service, to be used in the bath:

℞.	Sodii bibor.		
	Sodii bicarb., āā	℥i	30
	Pot. carb.	℥iii	90
	Pulv. amyli	℥iv	120

M. Sig.: One to three tablespoonfuls to each gallon of water, to be used in the bath.

In cases of pruritus the following:

℞.	Sodii carbonatis	℥ii	60
	Sodii biboratis	℥ii	60
	Pot. carb.	℥iii	90

M. Sig.: One such powder to be used in thirty gallons of water with one-half a pound of starch. The starch should be previously boiled with water in order to make a clear solution.

The following lotion is recommended in the treatment of acne and eczema:

℞.	Pulv. zinci carb. precip.		
	Pulv. cretæ prep., āā	ʒi	4
	Glycerini	ʒiii	12
	Acidi hydrocyani dil.	ʒss	2
	Liq. calcis	℥iii	90
	Aquæ rosæ		

M. Sig.: To be used locally.

In the erythematous and papular varieties the following combinations are recommended in *Applied Ther.*:

℞.	Zinci oxidi	ʒii-ʒiv	8-16	
	Acidi carbol.	gr. xx	1	30
	Mucilag. acaciæ	ʒii	8	
	Emul. amygdalæ	℥ii	60	
	Aquæ q. s. ad	℥viii	240	

M. Sig.: Apply locally.

An ointment similar to the following containing calamin is also recommended:

℞.	Calaminæ	ʒi	4
	Ung. zinci oxidi	ʒvii	28

M. Sig.: Apply locally to the affected parts; or the following:

℞.	Calaminæ			
	Zinci oxidi, āā	gr. xl	2	65
	Amyli	ʒi	4	
	Acidi salicylici	gr. x		65
	Petrolati q. s. ad.	℥i	30	

M. Sig.: To be used locally.

In the subacute form of eczema the following is recommended:

℞.	Zinci oxidi	ʒii	8
	Liq. plumbi subacet.	ʒvi	24
	Glycerini	ʒii	8
	Inf. picis liq., q. s. ad	℥iv	120

M. Sig.: As a local application.

Eczema of the Genitals.

Lutaud, in *Gaz. des Hôpitaux*, recommends the following as a lotion in eczema of the genitals:

℞.	Potassii chloratis	gr. xx	1	30
	Vini opii	*gtt. xlv*	3	
	Aquæ	℥viii	240	

M. Sig.: Apply locally to the affected parts.

Vulvar Pruritus.

H. Guilhot, in *Le Prog. Médical*, recommends the following:

℞.	Sodii hyposulphitis	gr. xlv	3
	Adipis lanæ hydrosi	℥i	30

M. Sig.: To be rubbed over the affected parts frequently.

Erysipelas.

The new treatment for erysipelas, according to the *Dietetic and Hygienic Gaz.*, consists simply in covering the affected area and a portion of the surrounding skin with a thick layer of white vaselin. This in its turn is covered with a mask of linen, and held in position by means of gauze bandages. The application is made twice a day. The results obtained by this method are very favorable and gratifying when compared with those following other methods, as painting with tincture of iodin, ichthyol or sublimate solution, etc. Fever, as a rule, diminished within two or three days, pain and tension in the affected parts were relieved, and recurrences were observed with no more frequency than in cases in which other methods were employed. The advantages claimed for this treatment are the absence of pain and irritation which accompanies the application of iodin or the bichlorid.

Medicolegal.

Thirty-Five Thousand Dollars for Loss of Legs.—The Court of Civil Appeals of Texas holds, in Gulf, Colorado & Santa Fe Railway Company vs. Shelton, that where a business man, 49 years of age, who had never been sick a day, was so injured as to necessitate the amputation of his right leg three inches above, and of his left leg nine inches below, the knee, an award of $35,000 damages could not be considered excessive.

Voidable Releases in Personal Injury Cases.—The Court of Appeals at St. Louis, Mo., holds, in the personal injury case of Roberts vs. the Central Lead Company, that where a party signs a release of a cause of action for personal injuries, and at the time is unable to fully understand the nature of the document because of physical and mental weakness produced by his injuries and the necessary use of drugs, a court of equity will rescind the release on timely application and the refunding of its consideration. Where a duty rests on a party to refund a sum of money as incident to the rescission of a release, it should be performed with reasonable diligence, in view of the circumstances. In Houston & Texas Central Railroad Company vs. Brown, the latter party, after his injury, executed a release to the company, relieving it from further liability. The Court of Civil Appeals of Texas finds that the execution of this release was obtained and based upon representations made by a physician who was then the agent and the representative of the company in the treatment of the party at an infirmary, to the effect that the bones of his arm had knitted and united together, and that the arm was well, and that as soon as the swelling had passed away his arm would be as good as ever; that he was on the safe side, and could safely make a settlement with the company for his injuries. This statement and representation by the physician was predicated on a statement by the party to the effect that he was willing to settle with the company, and release it from all claims for damages because of the injuries, whenever the bones of his arm had knit together and his arm was cured. The facts in evidence, the court says, warranted the conclusion that the physician made the representations and statements to the party for the purpose of inducing him to execute the release, and that the party believed the statements were true, and relied upon the same, and was thereby induced to make the settlement and sign the release, while the representations and statements so made were false, in that the bones at the time of the trial were not united, and that the arm was practically destroyed in its usefulness. And the court says that it can not agree with the contention of the company that it might escape liability on the ground that the representations and statements made by the physician were a mere expression of opinion. It was more than an opinion—it was the statement of a fact. The effect of his statement was that the party was a sound man, and that the bones of his arm had knitted together, and that it would be all right. It was true that this statement might have been predicated on his opinion as a medical expert, but the opinion was based on facts of which he possessed knowledge. The fact that the statement made by the physician was not intentionally false did not affect the right of the party to have the release set aside if he was misled by the statement, and executed the release believing the statement was true. In such a case, innocent misrepresentations may as well be the basis of relief as where such statements are intentionally false.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

New York Medical Journal, August 30.

1 *The Education and Development of Neurotic Children. Graeme M. Hammond.

2 *The Passive Carrying Function of the Arm; Its Importance: Its Destruction, and an Operation for Its Restoration. Phil Hoffman.

3 A Harelip Incision. Thomas Fillebrown.

4 Radiodiagnosis of a Case of Traumatic Periostitis. Charles Verge.

5 Gynecology and the Country Doctor. James H. Burtenshaw.

6 The Administration of Chloroform and Ether. Helen Hughes.

7 Amnesia, with Report of a Case. S. D. Hopkins.

8 Nutritive Infusions. Southgate Leigh.

9 The X-Rays in the Treatment of Malignant Growths. J. Rudis-Jicinsky.

10 A Successful Late Laparotomy for Gunshot Wound of the Intestine: Remarks on Suturing. W. J. Pettus.

Philadelphia Medical Journal, August 30.

11 *The Positive Diagnosis of Meningitis, Particularly Tuberculous, by Means of Lumbar Puncture. Alfred Hand, Jr.

12 *Municipal Water-Supplies and Their Examination. William G. Bissell.

13 The Treatment of Pulmonary Tuberculosis. William A. Caldwell.

14 Some Features of Medical and Surgical Study in London and Berlin. A. S. Grimm.

15 Amyotrophic Lateral Sclerosis. Report of a Case. E. J. French.

American Medicine (Philadelphia), August 30.

16 *The Effect of Rest upon the Progress of Septic Infections. A. J. Ochsner.

17 A Case of Primary Malignant Tumor of the Thyroid Composed of Adenocarcinoma and Perithelial Hemangiosarcoma (Sarcocarcinoma). Paul G. Woolley.

18 *Tetanus in the Light of Modern Treatment, with Report of Three Cases. Lawrence E. Holmes.

19 On the Diagnosis of Dementia Precox. William R. Dunton, Jr.

20 *Chronic Carbon Monoxid Poisoning and Carbonyl Hemoglobinuria; the Latter a Hitherto Undescribed Condition. Thomas J. Yarrow, Jr.

21 Strongyloides Stercoralis, the Correct Name of the Parasite of Cochin China Diarrhea. Ch. Wardell Stiles and Albert Hassall.

22 Some Sociologic Aspects of Preventive Medicine. A. B. Cooke.

Medical News (N. Y.), August 30.

23 *The Complications and Sequelæ of Acute Croupous Pneumonia. (Concluded.) H. A. Hare and Arthur Dare.

24 *On the Causes, Variation and Significance of the Color of the Feces. Lewis A. Connor.

25 *Suture of the Solid Viscera. R. C. Coffey.

26 Pulmonary Syphilis: Report of a Case. James M. Winfield.

27 Mosquito Destruction. George A. Soper.

Boston Medical and Surgical Journal, August 28.

28 The Changes in the Spinal Cord and Medulla in Pernicious Anemia. (To be continued.) Frank Billings.

29 *Cases of Prostatectomy, with Remarks on the Operation. Paul Thorndike.

30 *Smallpox: Its Medical Treatment. Michael Kelly.

Medical Record (N. Y.), August 30.

31 *Placenta Previa with Statistics from the Last 11,200 Deliveries of the Sloane Maternity Hospital. Franklin A. Dorman.

32 The Opinions of Different Surgeons and Pathologists as to the Origin and Cause of Fibroid Tumors. Mary A. Dixon Jones.

33 *Some Practical Problems in Sociology Shown by a Study of the Southern Negro. M. L. Perry.

34 Dust, Dirt, Dampness and Darkness as Etiological Factors in Tuberculosis. Charles R. Upson.

35 Out-of-Door Treatment; Its Special Relation to the Preparation for and Convalescence from Operations. N. B. Aldrich.

36 Treatment of Ulcers of the Leg. Cass Chenoweth.

St. Louis Medical Review, August 30.

37 On the Treatment of the Pronated Foot. M. B. Clopton.

Cincinnati Lancet-Clinic, August 30.

38 Landmarks in the Vagina. Byron Robinson.

39 Report of Some Surgical Diseases, with Excerpts from Case-Book of Notes Taken at the Time of Operation. Benjamin B. Cates.

Medical Age (Detroit, Mich.), August 25.

40 Briefs on the Surgery of the Genito-Urinary Organs. G. Frank Lydston.

41 The Surgical Treatment of Cholelithiasis. David Barrow.

42 Appendicitis. Hal C. Wyman.

Pediatrics (N. Y.), August 15.

43 *Hydrocephalus, Its Etiology and a Curative Operation Based on Same. H. M. Hunter.

44 A Report of Six Cases of Surgical Erysipelas Treated with the Antistreptococcic Serum, Without Benefit. Edwin Rosenthal.

Northwestern Lancet (Minneapolis), August 15.

45 *Nephropexy, with Especial Reference to the Indications for, and the Method of, Performing the Operation, with Report of Illustrative Cases. A. E. Benjamin.

46 Legal Medicine. J. P. Alexander.

47 Report of Two Cases of Ectopic Pregnancy with Discussion of the Diagnosis and the Time to Operate. George E. Barton.

Virginia Medical Semi-Monthly (Richmond), August 8.

48 *Report on Asiatic Cholera from the Santa Mesa Cholera Hospital.

Annals of Ophthalmology (St. Louis), July.

49 *The Operation of Advancement of a Rectus Muscle. Claud Worth.

50 A Subconjunctival Dermoid Cyst. James M. Ball.

51 Adenoma of the Lachrymal Caruncle, with the Report of an Additional Case. C. A. Veasey.

52 A Clinical and Histological Study of a Case of Melano-sarcoma of the Choroid. Frederick Krauss.

53 *Pathogenesis of Glaucoma. M. Uribe Troncoso.

54 An Operation for the Advancement of the Straight Muscles of the Eye, with Two Modifications, and Remarks upon the Theory of Its Action. Herbert W. Wooton.

55 A Clinical and Pathological Report of Two Cases of Choroidal Sarcoma Diagnosed in the First Stage and Removed by Enucleation—No Recurrence. H. V. Wurdemann.

56 A Remarkable Vascular Growth into the Vitreous. J. E. [illegible]

57 [illegible] of the Conjunctiva. L. A. W. Alleman.

58 [illegible] Abney Pellet Test for the Ready Detection of Central Scotomata. Charles A. Oliver.

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59 The Dangers of the Menopause. Sara E. Greenfield.

60 Amenorrhea. Florence Patrick.

61 Errors of Refraction as a Causative Factor in Headaches. Rosamond L. Cox.

62 Practical Points on Obstetrics. Bertha M. Greer.

American Journal of Insanity (Baltimore), July.

63 *The Criteria of Insanity and the Problems of Psychiatry. E. Stanley Abbot.

64 *On the Typhoid Psychoses. Clarence B. Farrar.

65 *Some Points in the Diagnosis of Dementia Precox. William R. Dunton, Jr.

66 A Case of Huntington's Chorea with Autopsy. Glanville Y. Rusk.

67 *On Some Terminal Diseases in Melancholia. Adolph Meyer.

68 Hydriatic Procedures as an Adjunct in the Treatment of Insanity. Emmet C. Dent.

69 Medicolegal Phases of the Vermont Observation Law for Criminal Insane. Walter D. Berry.

70 The Possible Influence of Rational Conversation on the Insane. Jas. M. Buckley.

Canada Lancet (Toronto), August.

71 A Case of Tetanus. Thomas Wylie.

72 The Treatment of Pneumonia. J. C. Mitchell.

73 Cancer of the Breast. T. K. Holmes.

74 The Rôle of Education in the Development of Self Control. W. H. Hattie.

75 The Management of the Various Forms of Nasal Obstructions. (Continued.) Perry G. Goldsmith.

Archives of Pediatrics (N. Y.), August.

76 *A Case of Chondrodystrophy Fetalis. John L. Morse.

77 *The Management of Rheumatic Children. Floyd M. Crandall.

78 *The Use of the Term "Enanthem." F. Forchheimer.

79 Report of a Case of Typhoid Fever Complicated with Pneumonia and Followed by Laryngeal Diphtheria. Edwin Rosenthal.

80 Aluminum Cream Dipper. Addison W. Baird.

Colorado Medical Journal (Denver), June.

81 Incentives Frost Craft.

82 Landmarks in the History of Medicine. F. E. Waxham.

83 *Address on Behalf of the Alumni. Martin E. Miles.

84 Complete Prolapse of the Uterus, Hysterectomy and Ventro-Suspension of the Cervical Stump; *Report of a Case.* I. B. Perkins.

Chicago Medical Recorder, August 15.

85 *Crossed Eyes and Their Treatment. J. Elliott Colburn.

86 *A Case of Typhoid Fever, with Temperature of 108 F. Followed by Two Distinct Relapses—Recovery. John S. Perekhan.

87 Clinical Notes upon Abdominal Section for Puerperal Sepsis. Henry T. Byford.

88 Surgical Treatment of Neuritis. Weller Van Hook.

Medical Mirror (St. Louis), August.

89 The Early Diagnosis of Uterine Cancer; Operative Limitations. John O. Polak.

90 *Nasal Obstructions. Dudley S. Reynolds.

91 A Few Observations on the Treatment of Anemic Conditions. J. H. Rider.

92 Ergoapiol (Smith) in Diseases of the Female. Charles H. Shepard.

93 Why Should We Not Treat the Gall-Bladder as We Do the Appendix? Roswell Park.

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94 Types of Pneumonia Occurring in Childhood. Floyd M. Crandall.

Pacific Medical Journal (San Francisco), August.

95 Th [illegible] Unit. George Adam.

96 Th [illegible] Waters at Meals. Alfred W. Perry.

97 *Th [illegible] the Stomach of Dogs, Succus Naturalis [illegible] a Therapeutic Remedy in the Treatment of [illegible] ections of the Stomach, Including Also Cancer of That Organ. George I. Bluhm.

Vermont Medical Monthly (Burlington), July 25.

98 Medicolegal Phases of the Vermont Observation Law for Criminal Insane. Walter D. Berry.
99 A Few Cases of Abdominal Surgery. C. E. Chandler.
100 Infantile Mortality. E. M. Brown.
101 Gallstones as a Surgical Affection. (Continued.) S. H. Weeks.

Southern California Practitioner (Los Angeles), August.

102 *Oophorectomy: Its Effect on the Mind and Nervous System. Walter Lindley.
103 The Pregnant Mother and the Obstetric Nurse. George E. Abbott.
104 The Medical History of Sir Walter Scott. Roberts Bartholow.

New Yorker Medicinische Monatschrift, July.

105 Was können wir bei acuter Appendicitis diagnosticiren? Willy Meyer.

Medical Herald (St. Joseph, Mo.), August.

106 Medical Examinations in Our Public Schools. E. A. Donelan.
107 The Diagnosis of the Causes of Sterility in Women. Palmer Findley.
108 The Vermiform Appendix as a Cause of Intestinal Obstruction. J. E. Summers, Jr.
109 A Case in Which a Large Bone Cavity Was Healed by Means of Thiersch Grafts. John P. Lord.
110 Recent Advances in the Treatment of Epilepsy. Harold N. Moyer.

Alabama Medical Journal (Birmingham), August.

111 *Complications and Sequelæ of Typhoid Fever with Report of Cases. Ira J. Sellers.
112 Diagnosis and Treatment of Appendicitis. J. A. Goggans.
113 Infectious and Contagious Diseases in Schools. B. F. Wilkinson.
114 *Preliminary Note on a New Quinin Derivative (Saloquinin). H. P. Coile.

New Orleans Medical and Surgical Journal, August.

115 The Value of Co-operation in the Sanitary Control of Our Periodic Epizootics of Anthrax. W. H. Dalrymple.
116 Syphilis of the Nose. W. Scheppegrell.

Occidental Medical Times (San Francisco), August.

117 Fractures of the Pelvis, with Report of Three Cases. Emmet Rixford.
118 Lobar Pneumonia, Followed by Pneumococcus Infection of the Right Antrum, Lachrymal Duct, and a Pseudo-membranous Angina, and Six Days Later by a Typical Diphtheria. Philip King Brown.
119 The Etiology and Diagnosis of Appendicitis. Alfred Eichler.
120 On the Treatment of Talipes Equino-varus Congenitus. James T. Watkins.
121 *Treatment of Spinal Tuberculosis. S. J. Hunkin.
122 *Symptoms and Diagnosis of Pott's Disease of the Spine. E. G. Frisbie.
123 Thyroid Extract in Gynecology. J. Coplin Stinson.
124 A Case of Tetanus Successfully Treated with Eserin. Clyde B. Laughlin.
125 Erysipelas. A. B. Grosse.
126 Recent Therapeutic Advance in Ophthalmology. William E. Briggs.
127 *The Prevention of Post-Operative Adhesions. J. Henry Barbat.

Canadian Practitioner and Review (Toronto), August.

128 Rubber Splints in the Treatment of Septal Curvature. J. Price-Brown.
129 The Doctor and the Medical Society. John Hunter.
130 The Production of the Sex at Will. James S. Freeborn.
131 The Filling of a Long-Felt Want. H. S. Hutchison.

Journal of Medicine and Science (Portland, Me.), August.

132 *Antisepsis and Asepsis in General Practice. N. M. Marshall.

Texas Medical Journal (Austin), August.

133 Recent Cases of Abdominal Surgery. Henry K. Leake.
134 Membranous Stomatitis Complicating Pneumonia; Eight Cases Reported. J. M. Frazier.
135 Ergoapiol (Smith) in Diseases of the Female. Charles H. Shepard.

Atlanta Journal-Record of Medicine, August.

136 The Origin of Alcohol. W. B. Parks.
137 *Experiment with Light in the Treatment of Pulmonary Tuberculosis. Robert F. Williams.
138 Laws of Nature. E. G. Ferguson.
139 The Importance of Diagnosis and Treatment in Diseases of the Stomach. Jno. C. McAfee.

Medical Summary (Philadelphia), August.

140 Practice vs. Theory in Rhinological Surgery. Carl Seiler.
141 The Typhoid Crisis. O. Henley Snider.
142 Infant Diarrhea. J. Hobart Egbert.
143 Some Hints as to Ichthyol, Euarol, and a New Cure for an Old Enemy. Geo. H. Candler.
144 A Short Talk on "Life." C. H. Scoville.
145 The Causes and Treatment of Offensive Breath. Charles W. McIntyre.
146 Summer Diseases in Children—Leading Causes. A. B. Woodward.

Peoria Medical Journal, August.

147 Pathology of the Kidney in Croupous Pneumonia. E. C. Franing.
148 Significance of Blood in the Urine. Sumner M. Miller.
149 La Grippe. W. B. Parsons.
150 Brow Presentations, with Report of a Case. C. U. Collins.

Dominion Medical Monthly (Toronto), July.

151 *Medical Testimony in Courts of Law. Judge MacDougall.
152 Hydrobromic Ether; Notes upon Its Use as an Anesthetic in Adenoids and Tonsil Operations. D. J. Gibb Wishart.
153 Clinical Notes on a Case of Membranous Glossitis. A. Jerome Harrington.
154 A Case of Facial Paralysis Due to Chronic Suppuration of the Middle Ear. Perry G. Goldsmith.

Medical Bulletin (Philadelphia), August.

155 Lupus Vulgaris and Lupus Erythematosus. John V. Shoemaker.
156 Impacted Cerumen. E. B. Gleason.
157 An Obstinate Case of Tinea Tonsurans Successfully Treated with Benzoyl-Acetyl-Peroxid (Acetozone). Allan P. MacDonald.
158 Address to the Graduating Nurses of the Training School of the Reading Hospital. J. Y. Hoffman.

Merck's Archives (N. Y.), August.

159 Thyroid Extract in Gynecology. J. Coplin Stinson.
160 Iron in Anemia. W. C. Cooper.
161 The Korean Pharmacopeia, Account of Some of the Queer Insect and Vermin Drugs of Korea. L. Lodian.

Memphis Medical Monthly, July.

162 Is the Medical Profession Entitled to Representation in the "Hall of Fame"? Jere Lawrence Crook.
163 Pneumonia. B. G. Henning.
164 Medical Examination for Life Assurance. L. M. Van Meter.
165 Diagnosis and Treatment of Fractures of the Neck of the Femur. Battle Malone.
166 Thoughts on Menstruation. Byron Robinson.

Old Dominion Journal (Richmond, Va.), July.

167 Experiment with Light in the Treatment of Pulmonary Tuberculosis. Robert F. Williams.
168 Inflammations of the Fallopian Tubes. Charles R. Robins.
169 Summer Diarrhea of Children. W. L. Harris.
170 Malaria and Pregnancy. A. B. Greiner.
171 Chronic Alcoholism. Frank M. Reade.

Georgia Journal of Medicine and Surgery (Savannah), May.

172 Throat Troubles in Scarlatina. O. Henley Snider.
173 Treatment of Typhoid Fever. C. T. Nolan.
174 Influenza in Children. J. Howe Adams.
175 Accidental Cures, Monstrosities and Adventitious Growth. F. M. Brantley.

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1. **Neurotic Children.**—Neurotic children are defined by Hammond as those whose nervous force is below the normal standard. The nerve elements, either from heredity or accident, or both, are poorly developed and are therefore incapable of normal resistance and never reach proper physical development. He believes by proper training these handicaps for the future can be removed and that the training should begin as soon as the neurotic element is discovered. He lays much stress on the diet, which should be mainly nitrogenous. He has no confidence in the notion that epilepsy is favored by this diet. Caution should be given as to overfeeding. Moral treatment is of great importance; the child should be required to be kept firmly in hand, and taught strict obedience and self-restraint and to control the emotions. It is advisable not to press the intellectual development; this is specially important up to seven or eight years of age. The education should be very cautiously advanced; such children need restraint more than others, with careful attention to the diet, sleep, the bodily functions, fresh air and proper clothing. With systematic, well-regulated and long-continued physical culture there should be no remains of the neurotic predisposition as the child enters manhood.

2. **The Carrying Function of the Arm.**—Hoffman points out the abnormalities of the arm affecting its passive carrying function. The forearm should diverge from the upper arm at an angle of about 170 instead of a straight line and destruction of this carrying angle may be brought about by fractures, rachitis or anything that changes the articular surface from one facing a little outward to one facing directly downward or slightly inward. He illustrates his views with pictures and describes his operation, in which he made a dissection of the soft parts to the humerus just above the inferior condyle, cutting three-fourths through the bone and reflecting it slightly outward, making a new carrying angle above the joint. He operates from the inner side to avoid involving the musculospiral nerve, and because it is better to bend the bone away from the cut and toward the position of correction, thus leaving unbroken the covering of the periosteum on the outer side. Simple section of the inner side will give a longer arm than a cuneiform operation on the outer.

11. **Meningitis.**—The value of lumbar puncture in the diagnosis of meningitis, especially tubercular meningitis, is insisted on by Hand. Only a few of the ordinary objective symptoms of meningitis may be present and many of them may be present when meningitis is not. The changes which occur in the cerebrospinal fluid as the result of meningitis are diminution or absence of sugar, the increase of albumin, and excepting in the simple serous meningitis, the presence of leucocytes, bacteria and frequently endothelial cells. The presence of sugar when other signs indicate meningitis is suggestive of tubercular disease, but its absence does not exclude tuberculosis. Complete absence of sugar is said to be the rule in other forms of meningitis except in the serous in which it is much diminished. The normal amount of albumin in the cerebrospinal fluid is said to have the maximum unit of .25 per 1000. It is usually reduced in meningitis, though it may also be reduced in the normal cases, and in tuberculous meningitis it seems to be rather higher than in other forms. According to Hand's experience a definite count of leucocytes is often difficult or impossible, but when the handling is very careful, the count is of great value. He found polynuclears in excess in all the cases in which tubercle bacilli were not discovered. The bacteria which he has found have been the tubercle bacillus, the pneumococcus, unidentified cocci, and an intracellular diplococcus, probably the meningococcus, which did not grow on blood serum or agar. In several cases the tubercle bacilli were associated with cocci so that the presence of other germs does not exclude tuberculosis. He describes his technic as follows: "The fluid should be allowed to drop from the needle into a sterile test-tube, which is then stoppered with cotton and allowed to stand for several hours, or until a strand of fibrin has formed; this occurs in from 1 to 6 hours, and it either settles to the bottom or reaches from the top of the fluid down to the bottom, spreading out in a fan-shaped delicate film. A straight platinum needle, not a loop, is touched to one edge of the fibrin, the adhesion being very firm; the fibrin is then transferred to a slide, care being taken to tip the test-tube so that the fibrin constantly floats in liquid; a few drops of the fluid are to be poured with the fibrin on to the slide, for, if the fibrin emerges for but an instant from the fluid, it will either roll up into a cord through which nothing can be seen or it will wrap itself so tightly around the platinum needle that it can not be detached; to prevent this, the edge of the test-tube should be flanged and not straight; when once on the slide and floating in the fluid, it can be carefully separated from the tip of the platinum needle with the help of an ordinary needle or pin; the excess of fluid is drained off from the slide and the remainder is evaporated by gentle heat, it being not only unnecessary but usually fatal to the success of the examination to press the fibrin between two slides; the film is fixed by heat, stained in the usual manner and then carefully gone over with a mechanical stage. A point for the protection of the examiner is worth mentioning; all of the germs are not caught in the fibrin, but some float free in the fluid, and it is well to flood the slide even to the risk of overflowing, a blotter or piece of filter-paper placed beneath the slide will absorb both the fluid and the stray germs, and disinfection is then easily accomplished by combustion; if the blotter is dark in color, the film of fibrin can then be seen much more easily and located on the slide. The next step in the examination is the taking of cultures; in the above series, cultures were obtained of pneumococci and of staphylococci twice each, all the other cultures remaining sterile. After the chemical examination, for which 5 c.c. will suffice, the remainder can be used for inoculation into guinea-pigs if this is deemed advisable; this is hardly necessary if tubercle bacilli have been found, but it is very desirable in all other cases and should be carried out, if possible, for then the exclusion of tuberculosis rests on unassailable ground; in but two of my non-tuberculous cases were inoculations made."

12. **Water Supplies.**—Bissell discusses the water supplies of cities and specially calls attention to the determination of the colon bacillus. The colon test properly made under certain conditions, he says, surpasses chemical means of analysis, both in delicacy and as an indicator of sewage pollution and is the greatest accessory in determining the relative degrees of safety under which a water supply may be used for household purposes.

16. **Rest and Septic Disease.**—Ochsner insists on the importance of absolute rest in septic infections, and he has become more and more impressed with the part which this element plays in the treatment. He says if complete rest is obtained by removal by gastric lavage of any food or mucus which may exist in the stomach, and then prohibiting the use of food and cathartics by the mouth, the inflammation will regularly remain circumscribed in the presence of gangrenous or perforative appendicitis, while it will as readily become diffuse if these precautions are not taken, unless at the same time the local cause of infection, the appendix, be removed and free drainage of the peritoneal cavity instituted. In other septic conditions it is also of value. He illustrates this by the result of strapping in the treatment of mastitis and the use of splints or plaster of paris casts in inflamed joints, strapping the chest in pleurisy, a dark room and bandaging of the eyes in conjunctivitis, etc. The element of rest should be borne in mind in the treatment of all forms of inflammatory conditions in any part of the body.

18. **Tetanus.**—The treatment of tetanus is reviewed and almost every form of medication used is shown to be ineffective. He asks, what are we to do in the case of tetanus? In the absence of any reliable remedy, and realizing the great fatality of the disease, it is only right that we should give the patient the benefit of every doubt and possibility. If there is a wound it must, of course, be thoroughly cleansed, and in rare cases and under certain conditions, amputation of a limb is advisable. The patient must be put in a darkened room and kept as quiet as possible. Antitoxin should be at once administered freely, and continued daily in large amounts, as frequently as the condition indicates. The hypodermic is the simplest method of administration, and probably as efficacious as any, though the intraspinal may be tried, if convenient. At the same time I would strongly recommend the hypodermic use of carbolic acid, as I know of no reason why the two methods of treatment should not be tried at the same time. Sedatives should be given freely, the amount being determined by the condition of the nervous system and their effect on the heart. Opium should never be omitted, the more powerful depressants being given as required; but in our efforts to allay the nervous irritability, we must be careful not to depress too much, as it is important to keep up the strength, especially in the chronic cases. During the convulsions inhalations of chloroform or amyl nitrite may be tried, but are not of much value, as during the spasms breathing is so greatly interfered with that very little of their vapor could reach the lungs. In some cases, late in the disease, stimulants may be indicated, though they should always be administered with caution, strychnia, of course, being avoided under all circumstances so long as the disease is in its active stages. During convalescence, it may be profitably employed. The question of feeding may come up and it is often impossible by the mouth and rectal feeding must be resorted to with hypodermoclysis of normal salt solution to relieve the thirst.

20. **Chronic Carbon Monoxid Poisoning.**—The dangers of coal gas or water gas are emphasized by Yarrow, who remarks that chronic monoxid poisoning occurs more frequently than is imagined, and is undoubtedly responsible for many obscure conditions which occur in the practice of every physician. The large consumption of gas for cooking purposes does not lessen the evil. He pleads for the more extensive use of the spectroscope in daily clinical work. The article contains reports of cases illustrating his views.

23. **Croupous Pneumonia.**—Hare and Dare in a study of the complications and sequelæ of croupous pneumonia independent of those from mechanical causes, conclude that they are best studied and classified as pneumococci infections. Their paper gives an arbitrary classification for easy remembrance. The series is composed of six classes as follows:

CLASS A.

Serous membranes	Pericardium....	Serous and purulent pericarditis.
	Pleura.........	Serous and purulent pleuritis and that affecting the diaphragmatic pleura.
	Endocardium...	Endocarditis. Malignant endocarditis. Ulcerative endocarditis, endocarditis with or without meningitis, or cerebrospinal meningitis.
	Synovial membranes..	Serous arthritis. Purulent arthritis. Osteo-arthritis.

The infection by the pneumococcus may cause pathologic changes in the central nervous system by the action of the toxins on the nerve centers.

CLASS B.

(*a*) Cerebral and cerebrospinal system....	Cerebral pneumonia. Meningitis. Meningitis due to pressure of exudate. Cerebrospinal meningitis. Hemiplegia. Paralysis. Cerebral abscess. Aphasia.
(*b*) Toxic action on the nerve centers.......	Delirium. Mania. Convulsions. Cardiac asthenia, resulting in delayed resolution, abscess and gangrene. Brachial neuritis. Bilateral polyneuritis. Trophic disturbances (herpes zoster). Temperature disturbances (hyperpyrexia) (subnormal ranges). Albuminuria and nephritis.
(*c*) Neurotic tendencies.	Retention of urine. Tetanoid and choreiform phenomena.

Changes in the blood and intravascular formations.

CLASS C.

(*a*) Intravascular (thrombosis and embolism)	Pulmonary gangrene, abscess and bronchiectasis. Spontaneous gangrene of lower extremities. Embolism of right lenticulo-optic arteries. Phlegmasia alba dolens. Renal and splenic emboli. Embolism of the brachial veins.
(*b*) Hemic changes....	Purpura hemorrhagica. Hemoglobinuria.

CLASS D.

Infection of glands and glandular structures.	Parotitis. Suppurative parotitis. Bronchial adenitis. Submaxillary adenitis. Thyroiditis. Orchitis. Ovaritis and abscess. Hepatitis.

CLASS E.

Infection of middle ear.	Otitis media. Purulent otitis media.

CLASS F.

From mechanical interference	Edematous laryngitis. Fatty tumor of right auricle. Jaundice. from obstruction of the bile-ducts. Dilatation of right heart from pulmonary obstructions (?) or toxic myocarditis. Delayed resolution and induration from cardiac asthenia.

24. **Color of the Feces.**—The normal feces are brown, of varying degrees of darkness, which are due largely to the bile pigment and are influenced by other causes such as digestive secretions, food residue, discharges from the intestinal wall and accidental ingredients such as drugs. The bile pigment is bilirubin, which in part is oxidized, either in the bile passages or soon after reaching the intestines, into biliverdin and several allied bodies. The pancreatic juice may have some influence, but not much under normal conditions. As a rule a vegetable diet produces much lighter colored stools than does a diet chiefly of meat. In infants the feces are of an orange-yellow color or that of the yolk of an egg. The intestinal discharges are mucus, pus, serum, blood, etc., which may modify the color, pus, for instance, giving a distinct yellow or yellow-greenish color; serum giving a straw-color where the usual fecal pigments are lacking as in cholera. Blood may make various changes in the color and certain articles of diet like cocoa, huckleberries, etc., may produce an appearance which may be easily mistaken for disorganized blood. Among the drugs Conner mentions are bismuth, which produces a blackish or dark green color due to bismuth oxydyl and not to bismuth sulphid as so commonly believed. The greenish stools attributed to calomel are not so frequent as supposed; a blackish-gray color occurs from iron, the yellow-colored from rhubarb, senna and santonin. The clay-colored stools of jaundice are well known, and he quotes Bunge as attributing this more to the presence of fat than to the absence of bile. Greenish stools are common in children but rare in adults excepting in certain cases of diarrhea, where Fleischer believes that they occur only when there is an inflammation with increased peristalsis of both small and large intestine and never when one or the other alone is involved, since in these cases either would have time for the reduction of biliverdin to hydro-bilirubin.

25. **Suture of the Liver.**—After we pass Glisson's capsule, according to Coffey, the softer structures of the liver have no more power to retain sutures to control and counteract blood pressure than so much mush. He thinks it of no use to apply sutures directly to the liver tissue for this purpose and employs a mattress suture where all the pressure comes on Glisson's capsule at three or four points. The pressure is all the time toward the center of the incision and obliterates all the space at the bottom. Two sutures are used, one being applicable to an incision which does not penetrate the liver entirely, and the other is applicable to wounds in which the liver is severed through and through. One he calls the Y-suture, the other the X-suture. The Y-suture is placed as follows: "A round curved needle, at least four inches long, armed with catgut or silk, is passed through the catgut support to the bottom of the incision, comes out on the other side, passes through another catgut support, re-enters through the support of the same side, goes back parallel to the other stitch and comes out through the support from which we started, making a quilt suture. A suture is then passed from the opposite side of the liver, either straight through or indirectly, as may be convenient, includes the two threads at the bottom of the cut in its loop, comes out on the bottom of the liver and again both ends passing through a single catgut weave are tied in the form of a quilt suture, thus drawing the other suture well into the bottom of the cut. The first suture is now tied and any amount of pressure can be used, for the line of pressure is not against the suture, but is on the catgut supports. Thus the bottom of the wound is brought in absolute apposition and any amount of pressure desired may be used. This may not bring the surface of the liver in as close contact as is desired, therefore, a second quilt suture is passed through the edges of the support, nearest the wound, simply taking in the capsule. In this way the tissues are absolutely brought in contact, and as much pressure can be brought to bear in closing a wound of the liver as in any other part of the body. In closing a wound of the liver which extends entirely through its substance, a modification must be used. Instead of the single suture which goes into the bottom of the liver, a second quilt stitch is passed through both sides on the bottom, the same as the Y-suture above, interlocking the two sutures to the center of the wound. In this way the pressure is brought to bear in a very effectual manner." The cuts which illustrate the article give a better idea of the suture than the description and the reader is referred to the original. Coffey says as far as he knows this method is entirely new, but he is conducting experiments on living animals to find the amount of catgut that will be absorbed. The *points which are original* are the use of the catgut weave for a support and the indirect or angular pressure made by a counter-traction suture. The needle should be round, full-curved and fully four inches long. The *one* with which the *counter-stitch is made* may be a simple darning-needle or any kind of a long straight needle.

29. **Prostatectomy.**—Thorndike remarks in favor of prostatectomy and reports a number of cases in which the suprapubic operation was performed. He gives the details of the procedure used from Fuller and sums up his conclusions as follows: 1. That great relief can be given to all patients

suffering from symptoms due to obstructing enlargement of the prostate, either by palliative or by operative means. . . . 2. That complete prostatectomy is always the operation of choice, because it is the only operative procedure which cures or gives uniformly good results, when successfully performed in proper cases. 3. That the best time for its performance is just as soon as palliative efforts have failed, or are manifestly impossible of execution, and before secondary changes in the bladder and kidneys, due to long-continued obstruction, have taken place. 4. That in those cases which come for surgical relief so late in the development of the pathologic conditions, that the bladders and kidneys are extensively diseased, and the patient is manifestly exhausted by long-continued suffering, other less certain and perhaps less severe measures may be advised, instead of a complete prostatectomy; but that such a decision can only be and must always be made by the surgeon for the individual case, and can not be made the subject of a generalization.

30. **Smallpox.**—The treatment of smallpox, of course, varies with the severity of the disease, and varioloid aside from the relation to the public need often cause but little inconvenience. Treatment is scarcely necessary, in many cases, but in the discrete or confluent smallpox, the indications for treatment are to preserve the patient's strength and relieve the skin manifestations. During the incubation period little is to be done, except to prevent anything that would debilitate. In the stage of invasion rest in bed is necessary, exclusion of solar light, use of tonics, phenacetin and other analgesics to relieve the headache, backache, etc., and ice for gastric irritation. Poultices or rubber bags filled with hot water applied to the stomach or back to relieve the distressing symptoms in these parts are contraindicated. Only easily digestible and good nutritious food should be employed. Stimulants are useful and agreeable adjuvants. Mild laxatives may be given in the early stage and continued if necessary. The pain and tenderness in the skin and the itching which develops are relieved by application to the parts of cloths wrung out of cold or hot water according to the patient's choice, and frequently changed. Gargles of chlorate of potash when the patient can use them are of benefit, but the greatest relief is obtained from a careful rinsing of the mouth by the nurse with a piece of clean old linen wrapped around her finger and previously dipped in a 1 to 20 per cent. solution of boric acid. The intense itching in the late pustular or suppurative stage is relieved by the mixture recommended by Dr. Hare: olive oil and lime water, equal parts, to which a little carbolic acid or thymoline is added. During the height of the secondary fever, the fever of suppuration, daily bichlorid sponge baths only can be given, as the patients are too sore and too much swollen to make feasible the giving of immersion baths. When suppuration and the secondary fever have subsided, and the crusts have fallen, the patient is given three thorough antiseptic baths at intervals of twenty-four hours. He then gets a clean, fresh suit of clothes and is removed to an uninfected part of the building. In the usually fatal hemorrhagic disease Kelly finds the remedies in regard to which there is most agreement among writers as to their efficiency are turpentine and ergot in liberal doses, carbonate of ammonium, quinin and the practice of transfusion.

31. **Placenta Previa.**—From statistics collected, Dorman draws the following conclusions: 1. That uterine relaxation and endometritis as important etiological factors are well shown; 2, that the immense variation in the types of bleeding should warn us to look on every bleeding at any time in pregnancy with suspicion; 3, that the very great possibility of sepsis should cause us to employ every precaution in asepsis. The necessity for exceptional care during the breech extraction, where the cervix is not completely dilated, is apparent. The cervix in this condition is unusually vascular and soft, and tears with fatal readiness. The chances are so great against the child that any eagerness to save it should not lead us to add risk to the mother's life. In connection with postpartum hemorrhage he mentions the danger of too great dilution of fluid by intravenous transfusion so that it will lose its power of clotting and the watery fluid will ooze through the tightest tampon. He therefore advises moderation in the amount of infusion. Repeated infusions of smaller amounts are preferable to one or two large ones. He suggests also the possible value of Cesarean section where the placenta is central or nearly so, the cervix rigid or undilated and the patient in a good condition, but this combination is very rarely found.

33. **The Southern Negro.**—According to Perry the southern negro is degenerating badly. He calls attention particularly to the prevalence of venereal diseases, showing that immorality is increasing. Tuberculosis is another disease which has become a scourge to the race, and it should be considered as almost entirely infected. The resistance to disease is lowered in the negro race. How much is due to these two causes is impossible to say. He thinks their part has been a major one. Insanity is next. In the last forty years the negro population of the state has been a little more than doubled, while the number of insane has increased twentyfold, the most rapid change that has ever been recorded in the history of any race. He finds little hereditary insanity existing at first, and attributes much of the physical and mental breakdown to the removal of healthy restraint and the tendency to migrate to cities and towns. In conclusion he notices the drug habits which he thinks are greatly increasing among the colored population of the towns, though the cocain habit seems to be decreasing since the law has taken the matter up. He mentions these facts as affecting the race as a whole, but not at all reflecting on honest negroes who are endeavoring to raise their race to a higher level.

43. **Hydrocephalus.**—Hunter has treated cases of hydrocephalus by opening through the dura, making a flap, and introducing a catgut ligature through the cortex into the lateral ventricles. After the first operation the improvement continued for six or eight weeks, but enlargement of the head increased and a second operation was performed. The child's condition was, therefore, as critical as it was at first, except the fever was lacking. He concludes that the reaccumulation of liquid was due to failure to secure a permanent opening between the ventricle and subdural space on account of the too rapid absorption of the very small ligature used in the first operation. He therefore used the larger No. 2 catgut, five strands, in his second operation, and with apparent perfect success. The child has now well-developed lower extremities and walks and runs about with other children two years after the operation.

45. **Nephropexy.**—The operation which is most satisfactory, according to Benjamin, is described by him as consisting mainly "in dissecting a strip of the fibrous capsule in a longitudinal direction, making two flaps, one at either pole of the kidney. When the dissection is made in this direction we shall have flaps long enough to bring up between the quadratus lumborum muscle fibers on either side of the wound and can fasten them in that position. The muscle fiber impinging upon these flaps gives additional support, and does not permit the sutures to cut through the capsule. When the flaps are dissected in the other direction, transversely, the flaps secured are very short and are of little avail as a support, for they are not long enough to bring up between the muscle fibers. The technic of the rest of the operation is about as described by other authors." He concludes as follows: "1. A certain percentage of prolapsed kidneys causes discomfort. 2. Prolapsed kidney often produces reflex symptoms. 3. Prolapsed kidney is often associated with various complications or dependent conditions. 4. Symptoms depending upon prolapsed kidney are frequently attributed to other sources. 5. The degree of prolapse does not always determine the proportionate amount of discomfort. 6. When the symptoms present have been traced conclusively to a prolapsed kidney, and when the suffering can not be relieved by pads or bandages, an operation should be advised. 7. The operation should be one which will anchor the kidney most securely in the position most comfortable to the patient. 8. The operation, properly performed, gives most satisfactory relief."

48. **Cholera.**—This number contains the report of Dr. T. R. Marshall to the Philippine Commission of Public Health on

Cholera, which seems to have been of an especially virulent type in the hospital reported from. Benzozone was used in some cases but found too irritating to the stomach in many others. Some advantage was obtained from rectal injections of normal salt solution and saline transfusions. He found that cases seen shortly after an attack and properly treated at home or removed to a hospital stood a chance of recovery, but a delay of five or six hours generally proved fatal.

49. **Rectus Advancement.**—The operation described in detail by Worth consists essentially in making two sutures, one above and one below on the muscle, both tied. One end of the thread is carried back, inserted through the muscle behind it and carried forward to near the corneal margin where it is brought out and again tied to the other end of the suture, left after tying the first. In this operation the central portion of the muscle is not constricted by suture and its main blood supply not interfered with. He says the immediate effect produced is the final result.

53. **Pathogenesis of Glaucoma.**—Troncoso holds from his statistics that the hypertension in glaucoma results from different exosmosis of aqueous which has thereby become more albuminous than normal, and in which vascular sclerosis is the principal factor. It occurs either as the result of a senile arteriosclerosis, or an arthritis, gout, etc., or as the result of localized endarteritis within the eyeball. The vessel walls become permeable to the albumin which, mixed with the contents of the anterior chamber, retards the proper filtration at the filtration angle. When the secretion of the albumin reaches a certain degree, the excretory passages still intact become insufficient, the intraocular tension rises until the augmentation of new aqueous equalizes the tension within the vessels, when secretion of aqueous is checked. Somewhat before this the first symptoms of glaucoma appear; the edema of the cornea, the moderate dilatation of the iris, the swelling of the retinal veins, the arterial pulsation, the periodic reduction of vision, the periorbital pains, etc., all phenomena dependent upon increased intraocular tension and venous stasis. Such attacks are nearly always associated with some mental emotion, a reflex congestion of the veins of the head, with insomnia, etc., producing a vasomotor dilatation showing itself chiefly in the vessels of the ciliary body. When these become severe, the disturbances progress by degrees until an acute attack of glaucoma breaks out. The amount of albumin increases, rapidly inhibits filtration and the tension rises. An intense congestion is produced in all the tissues of the eyeball accompanied by mild diapedesis (Knies). The cornea is infiltrated and becomes turbid, the iris is edematous, losing its normal appearance, its veins are dilated and tortuous, the uvea is copiously infiltrated. The vitreous presses forward the iris and lens and adds a new factor to encourage retention. He discusses the effect of iridectomy, myotics, complications of central and secondary glaucoma, and in conclusion reports experiments on rabbits with injections of albumin into the anterior chamber producing glaucomatous symptoms.

63. **The Criteria of Insanity.**—Abbot emphasizes the following points: "1. Insanity is a mental disease as shown by the criteria actually used in the determination of its presence or absence in the individual case; 2, the scientific study of insanity consists primarily in the study of the mental phenomena, not physical conditions; and 3, the study of physical conditions as possible causes is necessary, but loses a large part of its value unless the mental phenomena have been well studied, and of itself alone can never give us an understanding of insanity." The practical application of the paper lies in the fact that with modern scientific methods scientific psychiatric work can be done in the hospitals not equipped with laboratories.

64. **Typhoid Psychoses.**—These conditions are discussed at length and Farrar remarks in conclusion that typhoid fever attacking a sane person may leave him free of psychic disturbance or may give rise to all gradations of mental disease. That the severity of the symptoms do not necessarily stand in relation to the height of the fever or the severity of the infection and that subjects of psychopathic heredity are more prone to alienation, especially initial delirium, than those not thus burdened; that a protracted exhausting fever predisposes to an asthenic psychosis; that a second or third attack of typhoid is more likely to present mental troubles than the first. Of the special disease types the initial delirium is the rarest form, has the most rapid course and worst prognosis, over 50 per cent. ending fatally. It is essentially the expression of severe intoxication. The Nissl findings confirm this view. It often causes errors in the diagnosis and any case of mental derangement with fever justifies the suspicion of typhoid. The febrile psychoses are, of course, of the greatest frequency and afford the best outlook; that 25 per cent., however, persist for varying lengths of time into or after convalescence, and are especially due to the elevation of temperature and its consequences. The asthenic psychoses (excepting *conceptions délirantes isolées*, and cases of typical collapse delirium), have long weary courses and a doubtful outlook, with evidences of serious cerebral changes. They develop on a basis of exhaustion, anemia and malnutrition. There is, moreover, a post-typhoid predisposition (irritable weakness) which may develop late psychoses, with dubious prognosis. As a result of the metabolic revolution accompanying severe infections, it is observed that an attack of typhoid has been followed in many instances of so-called recoverable psychoses, by temporary improvement or recovery. Finally, he says that neither in their clinical or anatomical picture are typhoid psychoses distinguishable; that the elements of intoxication, infection, temperature, exhaustion, anemia, of whatever origin, may produce similar or indistinguishable appearances and that the determining factor of susceptibility to mental disorder, as well as of the course and event, may be expressed in a word as the mental reaction coefficient of the individual, together with its physical basis.

65. **Dementia Precox.**—The practical points in the diagnosis of this condition are the motor phenomena, such as tics, grimaces, impulsive movements, mannerisms, peculiarities of speech, etc. There is, the author thinks, a field that has not been fully investigated as yet in this line. One symptom noted by Kraepelin, but not emphasized by him, has been described by Dunton in a number of cases, that is, the mechanical irritability of the facial nerves which, when present and associated with mental aberration, is of diagnostic value. When the patient is tapped lightly with the percussion hammer over the cheek just in front of the ear, care being taken to exclude any visual impulse, there will be noticed a movement of the orbicularis palpebrarum varying in intensity from a marked contraction of the whole muscle, combined with other muscles, to a slight quiver of the inferior fibers. This phenomenon is quite different from that recently described by McCarthy, and Dunton hopes to investigate it more fully. The author specially points out the increase of the reflexes, which is common in this form of insanity and the tendency to sudden impulses, slow psychic reaction and silly purposeless resistance or negativism.

67. **Melancholia.**—Meyer reviews the cause of death in 36 cases of melancholia examined postmortem and calls attention particularly to a striking cell change mentioned by him in 1897 and which is practically the same as that described by Turner as characteristic of melancholia. In cases where this occurs the patients show resistance, rigidity, peculiar tetanoid attitudes of the extremities, frequent grimacing with the risus sardonicus, irregular twitchings and jactations appearing in exacerbations. The reflexes are generally exaggerated, rarely absent. There are no electric changes. The difficulty of coordination soon involves the deglutition and speech, and frequently diarrhea is noted with slight fluctuations of temperature. The mental condition is not easy to describe owing to the patient's condition, but he has been struck by the patient's ability to recognize the physician, even when hardly able to speak. While the symptom-complex may be of variable duration, occasionally only for a few days, followed by improvement with subsequent relapses, the end usually comes with bronchopneumonia or with death from infarction. The findings are much more extensive than Turner had supposed. Instead of being limited to the large cells of the cortex, they implicate many other large cell bodies, Clarke's columns, Deiter's

21 (No. 63.) Recherches bactériologiques sur la perlèche. G. Bureau and Fortineau.
22 A propos du sporozoaire de la variole. A. Clerc.
23 (No. 64.) *Péritonite par perforation dans la fièvre typhoide chez l'enfant (in children). H. Méry.
24 Emploi thérapeutique du pyramidon. P. Arsène Mesnard.
25 (No. 65.) *Traumatisms of the Scalp. R. Romme.—A propos des arrachements du cuir chevelu.
26 Toxicité de la substance rénale et néphrotoxines. J. Castaigne and F. Rathery.
27 L'intoxication saturnine chez l'enfant. R. Romme.
28 (No. 66.) Localisations rares de la maladie de Raynaud. Decloux and Ribadeau-Dumas.
29 Danger from Stools of Consumptives. Anglade and Chocreaux.—Les selles des tuberculeux ne sont pas moins dangereux que leurs crachats.
30 L'alcool et la resistance de l'organisme aux maladies. M. Labbé.
31 (No. 67.) Kephir from Goat's Milk.' J. Dupaigne.—Le képhir de lait de chèvre.
32 Les injections intra-veineuses de sels mercuriels dans la syphilis. J. Dumont.

Semaine Medicale (Paris), August 13 and 20.

33 (No. 33.) Volvulus ileo-cécal avec étranglement interne provoqué par une appendicite. Barth.
34 (No. 34.) *Néphrites primitivement unilatérales et lésions consecutives de l'autre rein. *J. Castaigne and F. Rathery.*

Jahrbuch f. Kinderheilkunde (Berlin), lv, June.

35 Zur Casuistik der Tumoren im 4 Ventrikel. H. Brüning.
36 Backhaus' Milk in Infant Feeding. C. Hartung.—Backhaus' Kindermilch.
37 Joint Affections in Scarlet Fever. F. von Szontagh.—Zur Kenntniss der scarlatinösen Gelenkentzündungen.

July.

38 Ueber Phosphaturie. F. Soebeer.
39 Unilateral Defects in the Thoracic Wall and Corresponding Arm. J. Schoedel.—Einseitige Bildungsfehler der Brustwandung.
40 Measurement of Amount of Food in Artificial Infant Feeding. M. Adam.—Nahrungsmengen künstlich ernährter Kinder nebst einem neuen Vorschlag zur Nahrungsmengenberechnung.
41 Ueber acute Osteomyelitis im Kindesalter, mit Berücksichtigung der Endresultate; 32 Fälle. R. Gonser (Basle).
42 *Study of a Breast Nursling. Nordheim.—Beobachtungen an einem natürlich ernährten Kinde.

Jahrbuecher f. Psychiatrie (Vienna), xxi.

43 Alterations in Motor Portions of Spinal Cord After Resection of Peripheral Nerves. E. Straussler.—Ueber Veränderungen der motorischen Rückenmarksstellen nach Resection und Ausreissung peripherer Nerven.
44 Ueber Migräne-Psychosen. R. von Krafft-Ebing.
45 *Critik der sogenannten traumatischen Syringomyelie. R. Kienböck.
46 Study of a Cerebellar Tumor. M. Probst.—Ueber die klin. und anat. Ergebnisse eines Kleinhirntumors.

Klinisch-Therapeutische Wochenschrift (Vienna), ix, July.

47 (Nos. 27 and 28.) *Suture of the Heart. H. M. Sherman.—Ueber Herznaht.
48 Application and Curative Results of Mineral Mud at Home.—L. Bram.—Ueber Anwendung und Heilerfolge von Hauskuren mit künstlich erhitzten Pistyaner Schlamm.
49 Report of Committee on Prophylaxis of Tuberculosis.
50 (No. 30.) Anesthesia for Operations on Penis. J. Sellei.—Ueber anesthesirìende Verfahren bei Penisoperationen mit bes. Berücksichtigung der Oberst'schen Methode.

Muenchener Med. Wochenschrift, July 20.

51 Ueber Stenose bei Amyloiddegeneration im Larynx. W. Courvoisier.
52 Ueber die Autolyse des puerp. Uterus. L. Langstein and O. Neubauer.
53 *Zur Frage der Händedesinfection. C. Lauenstein.
54 *Die Modification der subcutanen Arseniktherapie nach Ziemssen Speth. Jesionek.
55 *Gastric Ulcer. Ageron.—Diagnostisch-therap. Bemerkungen zum Magengeschwür.
56 *Die spinalen Reflexe in der Hysterie. Steiner.
57 Postmortem Findings in Injuries of the Thoracic Organs. Wetzel.—Ueber Verletzungen der Brust, speziell des Herzens.
58 Zur klinischen Bedeutung der *Retroflexio* uteri mobilis. A. Theilhaber.
59 When Did Aretæus of Cappadocia Live? R. Kossmann.—Wann lebte A. von C.?

August 5.

60 Extirpation of Lachrymal Sac in Case of Stenosis as a Means to Prevent Future Septic Infection of the Eye, Especially in Industrial *Accidents.* T. Axenfeld.—Die Prophylaxe der septischen Infektion des Auges.
61 Three Cases of Rumination in One Family. L. R. Müller.—Eine Wiederkäuerfamilie.
62 Advantages of Vaginal Operation for Ectopic Pregnancy. A. Rieck.—Zur Behandlung der Extrauterinschwangerschaft.
63 Negative Experimental Tests of Collargol. R. Trommsdorff.—Collargol.
64 *Zur Aetiologie des Eczems. Heubel.
65 Menabea venenata. A. Model.
66 Industrial Legislation and Otology. O. Korner.—Soziale Gesetzgebung und Ohrenheilkunde.
67 Historical Sketch of Certain Obstetric Maneuvers. G. Klein.—Zur Geschichte der Extraktion und Expression des nachfolgenden Kopfes.

Wiener Klinische Rundschau, xvi.

68 (Nos. 17 to 19.) Injuries of Liver. E. Fuchsig.—Zur Casuistik der Leberverletzungen.
69 Fall von traumatischem Scharlach (scarlet fever). T. Lippmann.
70 Die Crisis des Darwinismus. M. Kassowitz.
71 Morbid Dread of Blushing. L. Haskovec.—Ereuthophobie.
72 Water Cures, Physicians and Charlatans. Sarason.—Wassercuren und Aerztestand unter Berücksichtigung des Curpfuscherthums.
73 (No. 27.) 4 Fälle von Ileus. Chlumsky.
74 (No. 28.) Ueber eine wahrscheinlich als Recurrens zu deutende Erkrankung, nebst Bemerkungen über abortiven Typhus. Hodlmöser. (Concluded from preceding number.)
75 (No. 29.) *Action of Repeated Injections of Suprarenal Extract. F. Samberger.—Ueber die Wirkung wiederholter Injectionen von Nebennierenextract.
76 Die Indicationen für die Operative- und Apparatbehandlung in der Orthopädie. M. Haudek. (Concluded from No. 27.)
77 *History of the Pulse in Medicine. S. Zervos.—Zur Lehre von der Sphygmologie.
78 (No. 30.) *The Foot Clonus After Recovery from Cerebral Hemorrhage. Von Fragstein.—Ueber das Fuss- und die ihm verwandten Phänomene nach in Heilung übergangenen cerebralen Hämorrhagien.
79 Tropon-Cacao. J. Winterberg.

Wiener Klin. Wochenschrift, July 17 to 31.

80 (No. 29.) Photograph Paper for Light Tests. J. M. Eder.—*Verwendung gelbemfindlicher photographischer Papiere* zur photometrischen Bestimmung der Helligkeit von Arbeitsplätzen.
81 *Pancreasdiabetes und Icterus gravis. H. Teleky.
82 Antibodies. A. Klein.—Zur Frage der Antikörperbildung.
83 Technic of Leucocyte Counting. W. Türk.—Ueber Leukocytenzählung. (Concluded from No. 28.)
84 (No. 30.) *Study of Etiology of Alimentary Glycosuria. W. Schlesinger.—*Ueber einige ursächliche Bedingungen für das* Zustandekommen der alimentären Glycosurie.
85 Zur Frage der Pigmentbildung aus Tyrosin. M. Oppenheim.
86 Distomum hepaticum beim Menschen. E. Duffek.
87 (No. 31.) Adrenalin in der urologischen Praxis. A. von Frisch.
88 Cerebral Bladder Disturbances and Diagnosis of Tumors in the Corpus Callosum. E. von Czyhlarz.—Zur Frage der cere*braler Blasenstorungen,* zugleich ein *Beitrag zur Diagnostik* der Balkengeschwülste.
89 *Yeast in Therapeutics. H. Paschkis.—Die Hefe als Arzneimittel.
90 Disturbances in Musical Audition. F. Alt.—Ueber Störungen des musikalischen Gehörs. (Concluded from No. 30.)
91 Ueber die Reaction des Prostatasecretes bei chron. Prostatitis. H. Lohnstein.

Zeitschrift f. Orthop. Chirurgie (Stuttgart), x, 3.

92 Zur Statistik der Deformitäten. L. Rosenfeld (Nuremberg).
93 Relations between Physiologic Torsion of Spine and Lateral Curvature. W. Schulthess (Zurich).—Ueber die Lehre des Zusammenhanges der phys. Torsion der Wirbelsäule mit lateraler Biegung und ihre Beziehungen zur Skoliose unter Berücksichtigung der Lovett'schen Experimente.
94 Die Zuppinger'sche Skoliosentheorie. Ibid.
95 Congenital Upward Displacement of Patella. Blencke.—Beitrag zur so-gen. "*congenitalen* Verrenkung der Kniescheibe nach oben."
96 Beitrag zur Lehre von der seitlichen Deviation der Fingerphalangen. M. Karch.

Koch's Zeitschrift f. Hyg. u. Infekt. (Berlin), xl.

97 (No. 1.) Agglutination in Mixed Infection. A. Castellani.—Die Agglutination bei gemischter Infektion und die Diagnose der letzteren.
98 Effect of Grape Sugar on the Staph. pyog. H. Kayser.—Die Einwirkung des Traubenzuckers auf den verschiedenen Lebensäusserungen des Staph. pyog.
99 Bacteriologic Examination of Nose. B. O. Neumann.—Bact. Nasenuntersuchungen.
100 Ueber die Agglutination der Pneumokokken und über die Theorien der Aggl. F. Neufeld.
101 Ueber Gas-Phlegmone und Schaum-Organe und deren Erreger. E. Fraenkel.
102 Destruction of Anthrax Bacilli in Normal Lung. J. J. Snel.—Der Untergang von Milzbrandbacillen in der normalen Lunge.
103 Steam Disinfection of Animal Hair. Proskauer.—Zur Desinfection von Thierhaaren mittels Wasserdampfen.
104 Test Tuberculin Injections in the Army. Klimowitz.—Die Probe-Tuberculininjectionen zur Abwehr der Tuberculose in der Armee.
105 Untersuchungen über der Agglutination. P. Eisenberg.
106 (No. 2.) *Untersuchungen über den Mechanismus der Agglutination. A. Joos.
107 *Ueber die tetanusgiftneutralisirende Eigenschaft des Gehirnes. E. Marx.
108 Prophylaxis of Plague. Tavel and Others.—Ueber Pest*schützmaassregeln.*
109 Ueber einen neuen Bacillus aus der Gruppe der Influenzabac. G. Frank.
110 Action of Ethyl Alcohol on *Micro-organisms.* G. Wirgin.—Zur Wirkung des Ethylalkohols auf Mikroorg.
111 Agglutinins of Urine. W. W. Ford.—Beitrag zur Lehre von den Harnagglutininen.

Revista di Patologia nerv. e ment. (Florence), vii.

112 (No. 6.) *Anomalia del cervelletto (cerebellum); prima osservazione di scissione in due lobi del processus vermiformis. D. della Rovere.
113 *L'ablazione completa dell' apparecchio tiro-paratiroideo nei cani (thyroid-parathyroid apparatus in dogs). G. Coronedi.
114 *Contributo alla patogenesi del gozzo esoftalmico (exophthalmic goiter). E. Tedeschi.
115 (No. 7.) *Studi sull'anatomia patologica e la patogenesi delle psicosi acute confusionali. Camia.

1. **Banti's Disease.**—After reporting three cases and calling attention to their special features, Barr remarks that his view of Banti's disease is that it is probably due to a vasomotor paresis of the splanchnic area, either in whole or in part, and that this paresis arises from disease of the visceral sympathetic ganglia. As a consequence there is great engorgement of the abdominal viscera, especially of the spleen and liver and increased hemolysis, with consequent oligochromemia and oligocythemia. The increased blood supply to these organs leads to fibrosis and lessened function. The peritoneal effusion when it takes place seems to be due to the vascularity rather than to portal obstruction. The paresis leads to retention of blood in the portal area with lessened supply to the rest of the body, fall in the general blood-pressure with lessened work for the heart, impairment of nutrition and muscular atrophy. The digestion is usually impaired and there is apt to be an increase of toxins in the intestinal tract with further aggravation of the mischief. The engorgement of the viscera and mucous membrane generally is a frequent source of hemorrhage. As regards splenectomy he says it may be an excellent treatment for the disease as has been recommended, but we have to treat the patient rather than the disease. It might start up leukemia in some cases, as difficult to treat as the disease itself. We must try to assist the spleen and to increase the leucocytes and get beyond this organ and reach the nerves and ganglia which supply the other viscera. We must try to raise the general blood-pressure, improve nutrition and keep the intestinal tract as aseptic as possible. For this purpose he prescribes salol, benzo-naphthol and occasionally a saline purge, and to raise the blood-pressure and affect the nerves he gives strychnin, digitalis, quinin and caffein. He thinks perchlorid of iron with chlorid of calcium is a good hematinic and vascular tonic; it also lessens the liability to hemorrhage. *A priori* he would not expect benefit from arsenic and in his first two cases he is trying suprarenal capsule. In the early stage the patient should be kept in bed and a large elastic abdominal belt firmly applied would probably do good. The diet should be light, simple and easily digestible. As there is not so much obstruction to the portal circulation as in an ordinary case of cirrhosis, there is not the same necessity for limiting the quantity of fluids drunk. He finds the following prescription a good method of introducing chlorid of calcium into the system: Take about an ounce of gelatin, the juice of one lemon, from two to four drams of chlorid of calcium and one pint of hot water. Dissolve the gelatin, etc., allow to set, and it is then ready for use. He prefers in the majority of cases drainage in preference to epiplopexy as suggested by Murrell and believes that for cases curable by epiplopexy the simpler means are just as effective.

5. **Pyloric Obstruction.**—Barker tabulates ten cases of pyloric obstruction or gastroduodenal ulcer treated by operation and discusses the conditions. All the cases had had careful medical treatment before surgical interference was suggested. In all the cases the operation was the retrocolic variety (v. Hacker), suturing the serous and mucous coats below the proposed opening and then opening the gut and stomach, uniting the resulting edges and finishing the continuous suture over the front which had been begun before the viscera had been opened. The abdominal wound was closed in every case except one by sutures, including all the layers with the skin. In the cases in which the buried sutures were used in addition to the skin sutures, the wound gaped on the tenth day after the skin sutures had been removed. The lymph was scraped off the edges of the wound and the edges wiped and the whole thickness of the abdominal wall sutured in one suture, the old buried suture removed at the same time, and the wound healed as thoroughly as if by first intention. All his patients were fed from the first by the mouth as well as by the rectum and the patients were allowed to keep in a semi-recumbent position while awake and were laid on their right side for sleep or change of position. He thinks there is advantage in this as it increases the capacity of the chest by the sinking down of the abdominal viscera and thus wards off to some extent lung trouble. In nearly every case he introduced a rubber tube into the stomach during the first twenty-four hours to relieve the organ of bile, mucus and blood and in all cases the relief was striking.

6. **Gastroenterostomy for Non-Malignant Gastric Disease.**—Dalziel reports the general results in thirty cases, only one of which was fatal, and describes his method. In the fatal case the death was probably due to complications, a very large ulcer destroying the stomach wall and exposing the pancreas.

7. **Intestinal Anastomosis.**—In order to obtain the best results from any bobbin for intestinal anastomosis it should possess the following qualities. It should be as Bishop says: 1. Easy of introduction; 2, perfectly simple and require no elaborate technic; 3, it should be resistant and absorbable; 4, it should be so made that the purse-string sutures which encircle the ends of the gut should, as they are tightened, approximate these ends by the mere act of tightening; 5, when in position it should present the folds of intestine which have to be united by a second line of suture in such a way as to facilitate that suturing; 6, it should be of such a size and shape as to protect the line of suture during the period of plastic union. He has tested the various bone bobbins that have been devised and finds that none of them combine all these advantages, and offers his own. He illustrates three forms respectively for enterectomy, gastroenterostomy-ileocolostomy and pylorectomy. The metal button has the advantage of rapidity of operation and can not entirely be superseded, but should not be used unless the element of time is of most importance.

8. **Filaria Perstans.**—The filariasis of Uganda has been studied by Cook, who finds that a high proportion of the Baganda living in the immediate neighborhood of the capitol harbor the embryos of the parasite Filaria perstans in their blood. The different classes of natives show varying infection-rates; the peasant class were most affected, 54 per cent., then the sick in the hospital, 48 per cent., and those who lived in the best hygienic surroundings fared best, the chiefs and Europeans' servants, 36 per cent. Some cases occur with absolutely no further symptoms of disease, and are frequently a great danger to the uninfected population from the increased difficulty of segregation of filariated individuals. The majority of cases, however, are accompanied by some at least of the earlier symptoms of sleeping sickness, and hence a connection between the two conditions is highly probable. A very high proportion of cases of sleeping sickness, if examined at the right stage, readily show the filaria in the peripheral blood stream—32 cases out of 34 examined in the Mengo hospital. Although Cook has not found that the severity of somnolence depends on the number of Filaria perstans in the blood, he thinks, as a rule, the number and severity of the earlier symptoms do vary with the number of embryos in the blood. Some other factor in addition to the presence of filaria in the blood is required to aid the diffusion both of filariasis and of sleeping sickness, otherwise the hospital in which cases both of filariasis and occasionally sleeping sickness have been introduced ought to act as a center of infection, which is not the case. Experiments ought to be carried out to determine what this factor is, that is, testing the various blood-sucking insects on filariated individuals, and determining, if possible, if they cause diffusion of filariasis and, if possible, determining how filariasis oversteps the boundary line that borders on the established disease of sleeping sickness.

23. **Peritonitis from Perforation in Typhoid Fever in Children.**—Méry recently operated on a child who presented symptoms of peritonitis the fifteenth day of an apparently mild case of typhoid fever. The perforation was found and sutured and the child recuperated, but succumbed twelve days later to broncho-pneumonia. The peritonitis was diffuse at the time of the intervention, but the autopsy disclosed that the inflammation had mostly subsided. The laparotomy was not decided upon until the twenty-first hour. If it had been done earlier, before the peritonitis had become so extensive, the child might have been saved. Chevalier has recently saved two out of three patients operated on promptly under these circumstances.

21 (No. 63.) Recherches bactériologiques sur la perlèche. G. Bureau and Fortineau.
22 A propos du sporozoaire de la variole. A. Clerc.
23 (No. 64.) *Péritonite par perforation dans la fièvre typhoide chez l'enfant (in children). H. Méry.
24 Emploi thérapeutique du pyramidon. P. Arsène Mesnard.
25 (No. 65.) *Traumatisms of the Scalp. R. Romme.—A propos des arrachements du cuir chevelu.
26 Toxicité de la substance rénale et néphrotoxines. J. Castaigne and F. Rathery.
27 L'intoxication saturnine chez l'enfant. R. Romme.
28 (No. 66.) Localisations rares de la maladie de Raynaud. Decloux and Ribadeau-Dumas.
29 Danger from Stools of Consumptives. Anglade and Chocreaux.—Les selles des tuberculeux ne sont pas moins dangereux que leurs crachats.
30 L'alcool et la resistance de l'organisme aux maladies. M. Labbé.
31 (No. 67.) Kephir from Goat's Milk. J. Dupaigne.—Le képhir de lait de chèvre.
32 Les injections intra-veineuses de sels mercuriels dans la syphilis. J. Dumont.

Semaine Medicale (Paris), August 13 and 20.

33 (No. 33.) Volvulus ileo-cécal avec étranglement interne provoqué par une appendicite. Barth.
34 (No. 34.) *Néphrites primitivement unilatérales et lésions consecutives de l'autre rein. J. Castaigne and F. Rathery.

Jahrbuch f. Kinderheilkunde (Berlin), lv, June.

35 Zur Casuistik der Tumoren im 4 Ventrikel. H. Brüning.
36 Backhaus' Milk in Infant Feeding. C. Hartung.—Backhaus' Kindermilch.
37 Joint Affections in Scarlet Fever. F. von Szontagh.—Zur Kenntniss der scarlatinösen Gelenkentzündungen.

July.

38 Ueber Phosphaturie. F. Soebeer.
39 Unilateral Defects in the Thoracic Wall and Corresponding Arm. J. Schoedel.—Einseitige Bildungsfehler der Brustwandung.
40 Measurement of Amount of Food in Artificial Infant Feeding. M. Adam.—Nahrungsmengen künstlich ernährter Kinder nebst einem neuen Vorschlag zur Nahrungsmengenberechnung.
41 Ueber acute Osteomyelitis im Kindesalter, mit Berücksichtigung der Endresultate; 32 Fälle. R. Gonser (Basle).
42 *Study of a Breast Nursling. Nordheim.—Beobachtungen an einem natürlich ernährten Kinde.

Jahrbuecher f. Psychiatrie (Vienna), xxi.

43 Alterations in Motor Portions of Spinal Cord After Resection of Peripheral Nerves. E. Straussler.—Ueber Veränderungen der motorischen Rückenmarksstellen nach Resection und Ausreissung peripherer Nerven.
44 Ueber Migräne-Psychosen. R. von Krafft-Ebing.
45 *Critik der sogenannten traumatischen Syringomyelie. R. Kienböck.
46 Study of a Cerebellar Tumor. M. Probst.—Ueber die klin. und anat. Ergebnisse eines Kleinhirntumors.

Klinisch-Therapeutische Wochenschrift (Vienna), ix, July.

47 (Nos. 27 and 28.) *Suture of the Heart. H. M. Sherman.—Ueber Herznaht.
48 Application and Curative Results of Mineral Mud at Home.—L. Bram.—Ueber Anwendung und Heilerfolge von Hauskuren mit künstlich erhitzten Pistyaner Schlamm.
49 Report of Committee on Prophylaxis of Tuberculosis.
50 (No. 30.) Anesthesia for Operations on Penis. J. Sellei.—Ueber anesthesirende Verfahren bei Penisoperationen mit bes. Berücksichtigung der Oberst'schen Methode.

Muenchener Med. Wochenschrift, July 20.

51 Ueber Stenose bei Amyloiddegeneration im Larynx. W. Courvoisier.
52 Ueber die Autolyse des puerp. Uterus. L. Langstein and O. Neubauer.
53 *Zur Frage der Händedesinfection. C. Lauenstein.
54 *Die Modification der subcutanen Arseniktherapie nach Ziemssen Speth. Jesionek.
55 *Gastric Ulcer. Ageron.—Diagnostisch-therap. Bemerkungen zum Magengeschwür.
56 *Die spinalen Reflexe in der Hysterie. Steiner.
57 *Postmortem Findings in Injuries of the Thoracic Organs.* Wetzel.—Ueber Verletzungen der Brust, speziell des Herzens.
58 Zur klinischen Bedeutung der Retroflexio uteri mobilis. A. Theilhaber.
59 When Did Aretæus of Cappadocia Live? R. Kossmann.—Wann lebte A. von C.?

August 5.

60 Extirpation of Lachrymal Sac in Case of Stenosis as a Means to Prevent Future Septic Infection of the *Eye, Especially in* Industrial Accidents. T. Axenfeld.—Die Prophylaxe der septischen Infektion des Auges.
61 Three Cases of Rumination in One Family. L. R. Müller.—Eine Wiederkäuerfamilie.
62 Advantages of Vaginal Operation for Ectopic Pregnancy. A. Rieck.—Zur Behandlung der Extrauterinschwangerschaft.
63 Negative Experimental Tests of Collargol. R. Trommsdorff.—Collargol.
64 *Zur Aetiologie des Eczems. Heubel.
65 Menabea venenata. A. Model.
66 Industrial Legislation and Otology. O. Korner.—Soziale Gesetzgebung und Ohrenheilkunde.
67 Historical Sketch of Certain *Obstetric* Maneuvers. G. Klein.—Zur Geschichte der Extraktion und Expression des nachfolgenden Kopfes.

Wiener Klinische Rundschau, xvi.

68 (Nos. 17 to 19.) Injuries of Liver. E. Fuchsig.—Zur Casuistik der Leberverletzungen.
69 Fall von traumatischem Scharlach (scarlet fever). T. Lippmann.
70 Die Crisis des Darwinismus. M. Kassowitz.
71 Morbid Dread of Blushing. L. Haskovec.—Ereuthophobie.
72 Water Cures, *Physicians and Charlatans.* Sarason.—Wassercuren und Aerztestand unter Berücksichtigung des Curpfuscherthums.
73 (No. 27.) 4 Fälle von Ileus. Chlumsky.
74 (No. 28.) Ueber eine wahrscheinlich als Recurrens zu deutende Erkrankung, nebst Bemerkungen über abortiven Typhus. Hodlmöser. (Concluded from preceding number.)
75 (No. 29.) *Action of Repeated Injections of Suprarenal Extract. F. Samberger.—*Ueber die Wirkung* wiederholter Injectionen von Nebennierenextract.
76 Die Indicationen für die Operative- und Apparatbehandlung in der Orthopädie. M. Haudek. (Concluded from No. 27.)
77 *History of the Pulse in Medicine. S. Zervos.—Zur Lehre von der Sphygmologie.
78 (No. 30.) *The Foot Clonus After Recovery from Cerebral Hemorrhage. Von Fragstein.—Ueber das Fuss- und die ihm verwandten Phänomene nach in Heilung übergangenen cerebralen Hämorrhagien.
79 Tropon-Cacao. J. Winterberg.

Wiener Klin. Wochenschrift, July 17 to 31.

80 (No. 29.) Photograph Paper for Light Tests. J. M. Eder.—Verwendung gelbemfindlicher photographischer Papiere zur photometrischen Bestimmung der Helligkeit von Arbeitsplätzen.
81 *Pancreasdiabetes und Icterus gravis. H. Teleky.
82 Antibodies. A. Klein.—Zur Frage der Antikörperbildung.
83 Technic of Leucocyte Counting. W. Türk.—Ueber Leukocytenzählung. (Concluded from No. 28.)
84 (No. 30.) *Study of Etiology of Alimentary Glycosuria. W. Schlesinger.—Ueber einige ursächliche Bedingungen für das Zustandekommen der alimentären Glycosurie.
85 Zur Frage der Pigmentbildung aus Tyrosin. M. Oppenheim.
86 Distomum hepaticum beim Menschen. E. Duffek.
87 (No. 31.) Adrenalin in der urologischen Praxis. A. von Frisch.
88 Cerebral Bladder Disturbances and Diagnosis of Tumors in the Corpus Callosum. E. von Czyhlarz.—Zur Frage der cerebraler Blasenstorungen, zugleich ein Beitrag zur Diagnostik der Balkengeschwülste.
89 *Yeast in Therapeutics. H. Paschkis.—Die Hefe als Arzneimittel.
90 *Disturbances in Musical Audition.* F. Alt.—Ueber Störungen *des musikalischen Gehörs.* (Concluded from No. 30.)
91 Ueber die Reaction des Prostatasecretes bei chron. Prostatitis. H. Lohnstein.

Zeitschrift f. Orthop. Chirurgie (Stuttgart), x, 3.

92 Zur Statistik der Deformitäten. L. Rosenfeld (Nuremberg).
93 Relations between Physiologic Torsion of Spine and Lateral Curvature. W. Schulthess (Zurich).—Ueber die Lehre des Zusammenhanges der phys. Torsion der Wirbelsäule mit *lateraler Biegung und ihre Beziehungen* zur Skoliose unter Berücksichtigung der Lovett'schen Experimente.
94 Die Zuppinger'sche Skoliosentheorie. Ibid.
95 Congenital Upward Displacement of Patella. Blencke.—Beitrag zur so-gen. "congenitalen Verrenkung der Kniescheibe nach oben."
96 Beitrag zur Lehre von der seitlichen Deviation der Fingerphalangen. M. Karch.

Koch's Zeitschrift f. Hyg. u. Infekt. (Berlin), xl.

97 (No. 1.) *Agglutination in* Mixed Infection. A. Castellani.—Die Agglutination bei gemischter Infektion und die Diagnose *der letzteren.*
98 Effect of Grape Sugar on the Staph. pyog. H. Kayser.—*Die* Einwirkung des Traubenzuckers auf den verschiedenen [illegible] der Staph. pyog.
99 [illegible] of Nose. B. O. Neumann.—Bact.
100 Ueber die Agglutination der Pneumokokken und über die Theorien der Aggl. F. Neufeld.
101 Ueber Gas-Phlegmone und Schaum-Organe und deren Erreger. E. Fraenkel.
102 Destruction of Anthrax Bacilli in Normal Lung. J. J. Snel.—Der Untergang von Milzbrandbacillen in der normalen Lunge.
103 Steam Disinfection of Animal Hair. Proskauer.—Zur Desinfection von Thierhaaren mittels Wasserdampfen.
104 Test Tuberculin Injections in the Army. Klimowitz.—Die Probe-Tuberculininjectionen zur Abwehr der Tuberculose in der Armee.
105 Untersuchungen über der Agglutination. P. Eisenberg.
106 (No. 2.) *Untersuchungen über den Mechanismus der Agglutination. A. Joos.
107 *Ueber die tetanusgiftneutralisirende Eigenschaft des Gehirnes. E. Marx.
108 Prophylaxis of Plague. Tavel and Others.—Ueber Pestschützmaassregeln.
109 Ueber einen neuen Bacillus aus der Gruppe der Influenzabac. G. Frank.
110 Action of Ethyl Alcohol on Micro-organisms. G. Wirgin.—Zur Wirkung des Ethylalkohols auf Mikroorg.
111 Agglutinins of Urine. W. W. Ford.—Beitrag zur Lehre von den Harnagglutininen.

Revista di Patologia nerv. e ment. (Florence), vii.

112 (No. 6.) *Anomalia del cervelletto (cerebellum); prima osservazione di scissione in due lobi del processus vermiformis. D. della Rovere.
113 *L'ablazione completa dell' apparecchio tiro-paratiroideo *nei* cani (thyroid-parathyroid apparatus in dogs). G. Coronedi.
114 *Contributo alla patogenesi del gozzo esoftalmico (exophthalmic goiter). E. Tedeschi.
115 (No. 7.) *Studi sull'anatomia patologica e la patogenesi delle psicosi acute confusionali. Camia.

longer than two hours in the stomach, usually accompanied by simultaneous increase in the amount of fluids in the stomach. Or when considerable remains of a larger meal of meat, bread and vegetables are found in the stomach eight or nine hours afterwards. There is no other gastric affection in which such delay in the evacuation occurs constantly. The fluid food given to an ulcer patient stretches the stomach and drags it down. For this reason such patients should be kept in the dorsal decubitus or lying partially on the right side, with the pelvis elevated. This relieves the greater curvature, aids in the evacuation of the stomach and enables the food to be assimilated more rapidly, frequently fattening the patients. The enlargement of the uterus in pregnancy lifts up the greater curvature of the stomach in the same way, as if on a cushion, and thus mechanically relieves persons who have ulcers or ptosis of the viscera. After parturition the old symptoms return. He treats chronic ulcers by introducing into the stomach, after preliminary rinsing with a tepid boric acid solution, 200 gm. of linseed or poppy-seed oil containing 10 gm. of subgallate of bismuth (dermatol). This reduces the pain and improves the motor function. The oil alone is not so effective. It is indicated in all cases of not too advanced stenosis and without extreme, sack-shaped enlargement in which the oil might accumulate and fail to reach the ulcer.

56. Spinal Reflexes in Hysteria.—Steiner reports a case of uncomplicated traumatic hysteria which he has had under observation for years, in which the skin reflexes, the scrotum reflex in particular, is intact while the knee-jerk has disappeared. This is contrary to the text-books.

64. Etiology of Eczema.—Two children in one family became affected with extensive eczema. They were fed almost exclusively on milk from a single cow. On suspension of this milk the eczema rapidly healed. On resumption of the milk later it did not return. Investigation showed that at the time of the skin affection a large quantity of salt had been given the cow. When salt was again fed to the cow the eczema returned again, vanishing once more as the salt was discontinued. The eczema recurred later on one of the children when milk from a neighbor was purchased and again it was traced to an unusual amount of salt given the cows, and vanished on its suspension. No treatment was instituted at either time.

75. Action of Repeated Injection of Suprarenal Extract.—Samberger reports the results of a series of experiments on dogs repeatedly injected in a vein with about 5 c.c. of a 5 or 10 per cent. suprarenal extract. The aim was to approximately imitate the natural production of the suprarenal secretion and its influx into the circulation. The immediate effect after each injection was a remarkable pallor of all the visible mucosæ, maximal dilation of the pupils with loss of the reaction to light: the saliva streamed from the mouth and the temperature rose nearly a degree in three hours. Sugar appeared in the urine, but vanished again in twenty-four hours. The proportion sometimes amounted to 1.8 by the polarimeter. Exophthalmus was occasionally noticed. The respiration acquired something of the Cheyne-Stokes type. The gait became atactic and there was vomiting and incontinence of urine and spermatorrhea. The pulse was either much retarded or much accelerated. The secondary effect of the injections was a loss of appetite and weight, constipation or diarrhea and hypertrophy of the left ventricle. Some of the dogs succumbed after 8 c.c. of a 10 per cent. extract while others took 50 c.c. without disturbance beyond the symptoms mentioned above. After subcutaneous injection of the extract, edema and necrosis of the muscles developed at the spot and the animals suffered from apparently intense pruritus. In one instance severe hematuria followed a single subcutaneous injection. The animals became accustomed to the injections, the symptoms becoming comparatively attenuated after the first injection.

77. History of the Pulse in Medicine.—Zervos writes from Athens that Hippocrates was the first to note and describe the pulse, but Herophilus of Chalcedonia was the first to count it systematically. He lived about 300 B. C. and used a water clock for the pulse count. Galen's work on sphygmology is the best that has come down to us from antiquity. It is dated about 200 A. D.

78. The Foot Clonus in Recovery from Cerebral Hemorrhage.—Fragstein has had occasion to observe nine cases of men between 35 and 43, all with a history of syphilitic infection five to eight years before hemiplegia developed. The hemiplegia had passed away in all cases, the functions of the limbs were apparently normal in every respect, yet the foot clonus described by Westphal as a sign of cerebral hemorrhage or other lesion, still persisted unattenuated. The center that presided over the function was apparently restored to normal, but the function of the inhibiting center was evidently still deranged.

81. Pancreas Diabetes and Icterus Gravis.—Teleky has observed two cases of an affection in men of 50 which commenced with mellituria impossible to banish completely even on a strict diabetic diet. Icterus developed a few weeks afterward and on its appearance the sugar vanished permanently from the urine. The fat ingested was not utilized in the system to the normal amount and in both cases the icterus persisted until death which followed after a few months of progressive symptoms of chronic pancreatitis. In both the autopsy showed that the pancreas was the seat of profound pathologic alterations while the other organs were almost completely normal. In both cases the cause of the severe icterus was evident in the compression of the choledochus by the enlarged pancreas. The cases suggest that in future when icterus is observed accompanying or subsequent to mellituria, and the stools contain undigested fat, the possibility of pancreatitis should be borne in mind. If the icterus persists and is not accompanied by symptoms indicating gallstones, the icterus can be attributed to compression of the choledochus by the inflamed pancreas. If the icterus can be controlled by a choledocho- or cholecysto-enterostomy, the life of the patient may be prolonged. Surgical intervention should be early in such cases, without wasting time on useless medical measures.

84. Etiology of Alimentary Glycosuria.—Schlesinger describes experimental research which has established among other facts that alimentary glycosuria after ingestion of dextrose occurs exclusively by way of rapid absorption through the thoracic duct. His clinical and experimental experience further indicates that any injury of the liver has a tendency to induce alimentary glycosuria. The disturbance is not very pronounced so far as levulose and starches are concerned, and a second, re-enforcing factor must intervene before diabetes results. This factor may be what Naunyn calls congenital weakness of sugar metabolism, a hereditary tendency. It is also possible that an affection of some other organ, superposed on the first, may be sufficient to induce the diabetes which neither alone could accomplish. Naunyn is probably correct in the assumption that very pronounced alimentary glycosuria is suspicious of diabetes. Schlesinger found that dextrose was eliminated after ingestion of levulose in 2 cases of acromegaly, whose relationship to diabetes is generally recognized. The patients were free from sugar on ordinary diet, but on ingestion of 100 gm. dextrose their urine contained a large proportion of sugar, and after ingestion of levulose, first this sugar and then dextrose. His work emphasizes the importance of the absorption in the thoracic duct and of any disturbance in the liver function as factors in the etiology of diabetes.

89. Yeast in Therapeutics.—Paschkis has used yeast in about 20 cases of furunculosis, acne or severe folliculitis, and found that its therapeutic action was remarkably effective in some of the cases while others proved refractory. Brocq claims that it is as much of a specific in furunculosis as quinin in malaria or mercury in syphilis. There are no inconveniences from its use except that possibly if much sugar is being taken at the same time, the fermentation set up might induce considerable flatulency.

106. Mechanism of Agglutination.—Joos believes that he has finally established that agglutination is a chemical reaction, and that a true combination results which terminates in the formation of a new substance. Agglutination is the result of the combination of three substances, two of which are specific and the third is merely a minute quantity of some salt. The intensity of the reaction is determined by the particular salt present. The combination of the specific agglutinator with the agglutinatable substance produces the combination, but it is invisible to the eye or microscope and the bacilli remain alive, free and motile, until the salt is added. This causes precipitation at once, the salt entering into the combination. The properties of the new substance thus formed differ from those of its constituents. The trifle of salt needed may be supplied by the bodies of the bacteria. The phenomenon of agglutination, on the whole, he concludes, is very much like that of the production of a double salt.

107. **Neutralizing Property of Brain Tissue in Regard to Tetanus Toxin.**—In the experiments related the effect on the tetanus toxin *in vitro* of an emulsion of the brains of guinea-pigs proved to be identical with the action of antitoxin. This justifies the assumption that the action of guinea-pigs' brains and of antitoxin is essentially equivalent in this respect.

112. **Cerebellar Anomalies.**—Della Rovere and De Vecchi report a case of hitherto undescribed anomaly of the cerebellum consisting in separation of the posterior vermis by exaggeration of the curve between the superior and inferior portions and resulting in an anomaly of a body resembling a minute cerebellum resting on the after portion of the medulla.

113. **Functions of the Thyroid.**—Coronedi and Marchetti report experiments on dogs in which they had removed the thyroid and parathyroid bodies. They fed them with iodin and bromin preparations in fatty excipients with the result of relieving the strumapriva symptoms to a greater or less extent. Without formulating conclusions they remark that the salutary effect of halogens thus administered in animals after removal of the thyroid and parathyroid bodies indicates that there is some special action of these substances that render them a substitution to a certain extent of the thyro-parathyroid tissues, and that the experiments contribute valuable aid to our knowledge of the physiologic effects of bromin and iodin in the thyro-parathyroid apparatus.

114. **Exophthalmic Goiter.**—Tedeschi alludes to his former contribution abstracted in The Journal, vol. xxxviii, p. 1187, and reports additional experiments from which he deduces the following conclusions: 1. In animals, a lesion of the restiform bodies, especially the anterior portion, evidently causes the Basedowan syndrome. 2. In animals thus affected, but in which the symptoms have diminished or disappeared, it is possible to reawaken them in whole or in part by producing in them hyperthyroidization. 3. In animals in whom the thyroid apparatus has been removed almost totally the section of the restiform bodies does not cause the Basedowan symptoms. 4. In animals in whom the Basedowan symptoms have just been produced by loss of the restiform bodies, the removal of the thyroid gland diminishes or completely banishes the greater part or all of the symptoms.

115. **Acute Confusional Insanity.**—Camia has studied his personal observations and cases from the literature as regards the pathologic findings in acute confusional insanity. He finds the pathologic anatomy does not clear up the pathogenesis in many of the cases. Among the factors that cause acute confusional psychoses there is only one that seems to be common to the majority, perhaps to all. This consists in a special slight alteration of the organic chemism (changes in chromatin, etc.) which may depend on causes of various nature.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 21 to 27, 1902, inclusive:

Henry L. Brown, contract surgeon, detailed a member of an examining board at Fort Sheridan, Ill., vice Contract Surgeon Charles F. Smith, relieved.

Alpha M. Chase, contract surgeon, now at Fort Assiniboine, Mont., to report for duty at Fort Reno, Okla.

William M. Gray, major and surgeon, U. S. A., on being relieved from duty at Fort Thomas, Ky., to report for duty at Fort McPherson, Ga.

Gustavus I. Hogue, contract surgeon, now at San Francisco, to report for assignment in the Department of California.

Harry C. Marcy, contract surgeon, now under orders to accompany troops to Fort Slocum, N. Y., will, on his arrival at that post, proceed to Fort Riley, Kan., for duty.

Lewis B. Porter, contract surgeon, now at San Francisco, to report for assignment in the Department of California.

Harry S. Purnell, lieutenant and asst.-surgeon, U. S. A., detailed a member of an examining board at Columbus Barracks, Ohio, vice Major Guy L. Edie, surgeon, U. S. A., relieved.

Edward Sears, contract surgeon, now at Fort Niobrara, Neb., is assigned to duty at that post.

John M. Shepherd, contract surgeon, leave of absence extended one month.

Allen M. Smith, captain and asst.-surgeon, U. S. A., leave of absence for fifteen days granted, to take effect about Sept. 1, 1902.

Edwin P. Tignor, contract surgeon, leave of absence from the Department of the Missouri extended ten days.

George H. Torney, major and surgeon, U. S. A., to proceed to Little Rock, Ark., to confer with the U. S. attorney for the Eastern District of Arkansas on business pertaining to the Hot Springs reservation and on the completion of this business to return to his proper station, the Army and Navy General Hospital, Hot Springs, Ark.

William J. Wakeman, major and surgeon, U. S. A., former orders amended so as to direct him to proceed to Fort Thomas, Ky., to relieve Major William W. Gray, surgeon, U. S. A.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending August 30:

P. A. Surgeon W. H. Bell, detached from the *Chesapeake,* and ordered to duty as a member and recorder of a Board of Medical Officers, Naval Academy, Annapolis, Md., and thence home and to wait orders.

P. A. Surgeon F. L. Benton, part of order of May 27, detaching from *Columbia,* revoked.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 30, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 10-17, 8 cases.

Colorado: Denver, Aug. 8-16, 1 case.

Illinois: Chicago, Aug. 16-23, 4 cases.

Indiana: Indianapolis, Aug 16-23, 3 cases.

Louisiana: Shreveport, Aug. 16-23, 3 cases.

Massachusetts: Aug. 16-23, Boston, 8 cases, 3 deaths; Cambridge, 1 death; Lawrence, 2 cases.

Missouri: St. Joseph, Aug. 16-23, 16 cases; St. Louis, Aug. 17-24, 1 case.

Nebraska: Omaha, Aug. 16-23, 4 cases.

New Hampshire: Manchester, Aug. 16-23, 1 case.

New Jersey: Camden, Aug 16-23, 3 cases; Jersey City, Aug. 17-24, 1 case; Newark, Aug. 16-23, 6 cases; Passaic, July 26-Aug. 23, 2 cases.

New York: Buffalo, Aug. 16-18, 4 cases; New York, Aug. 18-25, 5 cases, 1 death.

Ohio: Cleveland, Aug. 16-23, 50 cases, 8 deaths.

Pennsylvania: Aug. 16-23, Allegheny, 2 cases; Altoona, 1 case; Erie, 6 cases; Johnstown, 4 cases; McKeesport, 3 cases; Philadelphia, 3 cases; Pittsburg, 9 cases, 1 death.

South Dakota: Sioux Falls, Aug. 16-23, 1 case.

Utah: Salt Lake City, Aug. 16-23, 1 case.

Wisconsin: Milwaukee, Aug. 19-26, 1 case.

SMALLPOX—FOREIGN.

Canada: Quebec, July 26-Aug. 16, 3 cases.

Great Britain: Dublin, Aug. 2-9, 1 case; Glasgow, Aug. 8-15, 1 case; Leith, Aug. 2-9, 1 case; London, Aug. 2-9, 21 cases, 4 deaths.

India: Bombay, July 22-29, 8 deaths; Calcutta, July 19-26, 1 death; Karachi, July 20-27, 1 case, 1 death.

Russia: Odessa, Aug. 2-9, 4 cases.

YELLOW FEVER.

Brazil: Amazon Valley, July 24, raging.

Colombia: Panama, Aug. 11-18, 3 cases, 1 death.

Dutch Guiana: Paramaribo, July 1-30, 1 case, 1 death.

Mexico: Coatzacoalcos, Aug. 8-16, 9 cases, 2 deaths; Vera Cruz, Aug. 8-23, 39 cases, 17 deaths.

PLAGUE.

Egypt: Alexandria, April 14-Aug. 6, 70 cases, 35 deaths; Tukh District, May 2-Aug. 6, 39 cases, 21 deaths.

India: Bombay, July 22-29, 28 deaths; Calcutta, July 19-26, 12 deaths; Karachi, July 20-27, 20 cases, 15 deaths.

Russia: Odessa, July 26, officially announced.

CHOLERA.

China: Niuschwang, July 5-12, 98 cases, 81 deaths; Tientsin, June 30-July 14, 190 cases, 110 deaths.

Egypt: General, July 15-Aug. 6, 981 cases, 819 deaths; Alexandria, to Aug. 6, 5 cases, 4 deaths; Assiout District, including Moucha, July 5-Aug. 6, 459 cases, 372 deaths; Cairo, July 22-Aug. 6, 464 cases, 404 deaths.

India: Bombay, July 22-29, 4 deaths; Calcutta, July 19-26, 34 deaths; Karachi, July 20-27, 25 cases, 24 deaths.

Japan: Fukuoka Ken, to July 28, 287 cases, 168 deaths; Hiogo Ken, July 29, present; Kanagawa Ken, July 29, 1 case; Kumamoto, July 29, present; Nagasaki, July 29, present; Saga Ken, July 29, present; Tokyo Fu, July 29, 3 cases.

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Address.

SURGERY OF TUBERCULAR CAVITIES OF THE APEX OF THE LUNG.

CHAIRMAN'S ADDRESS, DELIVERED BEFORE THE SECTION ON SURGERY AND ANATOMY, AT THE FIFTY-THIRD ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, AT SARATOGA SPRINGS, N. Y., JUNE 10-13, 1902.

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PHILADELPHIA.

When I commenced, a year ago, the experimental work intended to be my contribution to our symposium on "Tuberculosis of the Soft Parts," selected for discussion before this section, it was my hope that I should be able to add something of practical and personal importance to the subject in its relation to human lung surgery. Unfortunately, I am obliged to report that I have been unable to induce any patient to submit to the operation of pneumonectomy or pneumonotomy for tuberculous cavities in the lung. Individuals in the early stages, at the time when operation would be most helpful, have naturally declined it, considering it unnecessarily serious; while those seen by me in the later stages have been too far advanced for me to conscientiously recommend operative procedures.

For many years it has been my expectation and hope that we should be able to treat and eradicate local tuberculosis of the lungs as we eradicate local tuberculosis in the joints and in other tissues. The anatomic and surgical difficulties to be encountered in invasion of the chest are, however, far greater than in any other region, even the brain and abdomen, which must account for the slow advance that has been made in lung surgery. A few brilliant results have been reported, but I regret to say that the majority of operative procedures have not prolonged life, while in many instances existence has been shortened.

OBSTACLES TO OPERATION.

The difficulties in entering the thoracic cavity are due to the fact that respiration is a vital function, which is both important and immediate and which can not be interfered with even for two minutes without serious menace to or even loss of life, while in both abdominal and in cranial surgery the interference is with functions by no means so immediately concerned with existence. The moment that external air pressure of fifteen pounds to the square inch is admitted outside a healthy lung the symptoms of dyspnea in the majority of cases become so profound and alarming that operative procedures must be suspended, and the entire efforts of the surgeon directed to the immediate continuance of respiration. The expansile function of the lungs, the movement of the mediastinal partition of the thoracic walls and of the diaphragm are all concerned, and while the condition is temporarily improved by closure of the wound, yet the air hunger is still great, and unless the Fell O'Dwyer, or other form of artificial or respiratory apparatus is at hand, life may be lost. In a few cases, which can not be explained, these symptoms do not occur either in the human being or in dogs, but they are so rare that the surgeon can not expect to meet them in a given case. Of course, in disease, conditions are different and the admission of air is a less serious matter, the previously compressed lung, or one that is bound to the chest wall, being much less liable to collapse. The anchoring of the lung to the chest wall, either artificially or by disease, not only prevents collapse when air is admitted, but also retains the mediastinal partition in position, and prevents interference with the movements of the opposite lung.

The experiments below enumerated were undertaken in an attempt to discover the possibility of the successful drainage of tubercular cavities in the lung, but it was found that in artificially induced tuberculosis the tendency was to promote general infiltration, and the time required to produce cavities was so long that the experiments were impracticable. I was therefore obliged to content myself with an investigation of the susceptibility of the animal to pneumonectomy and pneumonotomy, together with improvement in the technic of promoting adhesions of the pleural surfaces before making the incision.

It is not my purpose to touch at all on the question of gangrene of the lung, or abscess, or bronchiectasis, or any of the conditions other than tubercular cavities, since time does not permit.

In my experience, even cavities that form in the middle and lower lobes posteriorly are usually the result of previous pneumococcic infection, the abscess and the tubercular infection being later results. These are the cases that are almost uniformly successful under pneumonotomy. They should be classified by themselves, since, although sometimes tubercular, they differ decidedly in their prognosis from tubercular cavities in the apex. Many cases of abscess and gangrene following pneumonia in the lower lobe are mistaken for tuberculosis.

THE VARIOUS OPERATIONS PERFORMED.

The operations practiced for the relief of tubercular cavities of the lungs are:

1. Compression of the lung by the injection of nitrogen or other sterile gas into the pleural cavity.
2. Removal of ribs to permit collapse of chest wall and consequent compression of lung.

3. Counter-irritation by cautery.
4. Aspiration and the injection of medicated solutions.
5. Incision and drainage of the cavity—pneumonotomy.
6. Excision of the diseased area—pneumonectomy.

NITROGEN INJECTIONS.

Compression of the lung by the injection of nitrogen or other gas into the pleural cavity for the purpose of collapsing the lung and thereby giving rest to the organ until healing of the cavity has occurred was advocated by Murphy before the Association in 1898, but statistics are yet too few to form a rational basis for decision as to its merits. Compression of the lung favors fibrosis, cicatrization and occlusion of lymph channels and blood vessels. Lemke[1] has published a number of articles which show excellent results, and he will present further arguments in a paper to be read in the Section on Practice of Medicine at this meeting. His conclusions are that the method is helpful in arresting pulmonary hemorrhage and in hastening cavity cicatrization. His average injection is 120 cu. in. every three or four weeks.

COMPRESSION BY REMOVAL OF RIBS.

Allis,[2] Porritt, Ferguson, Berliner, Spengler and others have recommended the compression of the lung and the reduction of lung space by the removal of a portion of the ribs, either in front or behind, or both. The latter adds local treatment by iodoform to the procedure. Bloch immobilized the chest for pulmonary tuberculosis by a plaster jacket on the diseased side, with great relief to the cough and improvement of symptoms.

COUNTER-IRRITATION.

Vidal has tried the effect of thorough counter-irritation, treating forty-four cases by the actual cautery applied to the chest wall over the diseased area. He reports thirty-seven good results and believes that the procedure in the early stages is curative, and in the later stages beneficial. He attributes the results to compensatory congestion and to the increased nutrition of the organ called forth reflexly. Cough and expectoration are lessened and general condition improved.

INJECTION OF MEDICATION.

Aspiration and the injection of medicated solutions advocated by Baglivi in the 16th century, and practiced by Hastings and Storcks in the 18th, and also by Mosler, was revived by Pepper[3] and others about 1873-4. These injections were used as many as forty times in some cases. They were not unattended by danger, and the results have not been favorable. The substances employed have been iodin 10 per cent., carbolic acid, iodid of potassium, bichlorid of mercury, iodoform, nitrate of silver, etc. Tracheal injections and vapors of creosote, menthol, etc., have also been employed.

INCISION AND DRAINAGE.

Pneumonotomy has for several centuries been recognized as among the legitimate operations for attacking cavities in the lungs, notice having first been attracted to its value by the occasional occurrences in duelling, when lung cavities were opened by thrusts of swords, with recovery following. The operation was done with definite surgical purpose as far back as 1643 by Baglivi, and has been revived at periods since that time, as the tables appended to this report show. Valuable work has been done in this country by Park, Wills, Murphy and others. The percentage of cures does not show any marked increase over those treated along hygienic and dietetic lines. There is no question but that certain cases are markedly benefited temporarily, especially where the infection is mixed, and where both tubercular and streptococcic infections were present in cavities draining imperfectly through the bronchi. The retained secretions rapidly infect the individual and produce those symptoms familiarly known as hectic. The greatest advantage of the operation would be secured by *early drainage*, but, as stated at the beginning of my article, these are the cases which decline the operation, and in whom also the surgeon is loath to urge its performance. In the later stages there is, of course, far less benefit to be expected, as it is hardly probable that the focus is single, or that the entire diseased area can be reached. In these cases, however, marked benefit does occur from the lessening of the cough and the lowering of the temperature, and the increased comfort and strength given to the patient.

The important preliminary step is the accurate locating of the cavity by auscultation, percussion and the use of the *x*-ray. This latter, while of value, is not positive, and benefit to diagnosis is relative. It is not a certain guide; nevertheless, it is of advantage, as it sometimes gives a shadow at the site of the focus.

TECHNIC OF PNEUMONOTOMY.

Chloroform is the best anesthetic and need be given but in small amount; in fact, after the external tissues are divided, but little pain will be experienced. Some patients who bear pain well will get on admirably with local anesthesia. An incision should be made from the *sternum outward in the line of the second interspace*, or over the accurately located diseased focus. As a rule, it is better to excise a couple of inches of one or two ribs, which should be done cautiously and subperiosteally, so that the pleura is uninjured. Some operators go directly through the interosseous space and omit the rib resection, but unless the surgeon is certain that adhesions exist, it is best to have good room for manipulation. After resection, it is sometimes possible to observe through this intervening membrane the movements of the lung, and to determine the very important question of adhesions; upon these adhesions will depend largely the success of the operation. If the cavity can be reached without the admission of air into the pleura, and without the risk of infecting the pleura with the tubercular discharge, two very positive advantages have been secured and the operation becomes a simple one, practically little more than the opening of an abscess. If the pleura is thin, transparent and lustrous, the lung is not adherent; if dense and gray, the layers are probably in contact. An aspirating needle can now be introduced; if the point of the needle moves but slightly, adhesions are present. Murphy has advised the injection of *sterile air or nitrogen into the pleural cavity*; if there are no adhesions, each inspiration will suck in more air, and the lung will collapse, while if adhesions exist, the respiratory conditions will not change. Shapesko uses an exploratory needle connected with a manometer; if the needle enters an open space, the register is lowered; if there are cavities, it remains stationary. If *adhesions are not present*, it is always well to delay the operation and endeavor to secure the apposition of the two pleural layers. This I have been able to accomplish in twenty-four hours by carrying catgut sutures with a handled perineal needle, long and with a sharp curve, through the interosseous space, and through the superficial portion of the lung for an inch and a half or more. Four sutures are thus placed in a parallelogram. say one and a half inches wide by two inches long. They are then tied just sufficiently firmly to bring the two layers of the pleura in apposition, but not to strangulate the tissues. In my experience twenty-four to forty-eight hours are long enough to secure adhesions. Chlorid of zinc applied by tampon or by paste is sometimes employed to produce adhesions, but is slow in action. Agar-agar has also been injected into the pleural cavity to fix the lung and produce a new cell formation like connective tissue.

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[1] The Journal A. M. A., Oct. 14, 21, 28, 1899.
[2] Trans. Penn. State Med. Soc., 1891.
[3] Pepper: Trans. Amer. Med. Asso., 1880, xxi, 239.

I have never had an accident by the suturing method except once in experimental work, when the needle evidently passed through a good-sized pulmonary vein and then through a bronchiole. The dog collapsed, showed bloody expectoration and died immediately. The postmortem showed that the bronchioles were filled with blood and the heart with air. This accident adds another to the dangers already reported.

Fortunately, in tubercular cases the lung is usually adherent. If the lung is not adherent, there is danger of pneumothorax and empyema, both of which conditions are exceedingly grave. The wound being left open. the operation may be completed on the second or third day under cocain by an incision along the center of the parallelogram. An aspirating needle may be introduced to find the cavity, the incision being then made along the canula as a guide, either with knife or cautery, according to the choice of the surgeon. If the cavity is deep, of course the latter is less likely to produce hemorrhage from intervening vessels, especially if the lung tissues are soft.

Palpation of the lung substance may discover the site of the abscess, if the aspirator has not been successful, and the finger or a pair of blunt forceps may be used to reach the cavity. Great care must be exercised not to break up pleural adhesions. Once the pus is reached the canal can be dilated by a pair of strong forceps or the finger, and the cavity thoroughly mopped, not irrigated. As there is usually sufficient irritation arising from the operation, it is not well to apply any caustic or any other application to the wall of the abscess. Should a hemorrhage be started, the part should be closely packed with sterile aristolated gauze, which may remain in place for forty-eight hours. If hemorrhage is not severe a rubber or gauze drain may be at once inserted. Irrigations are inadvisable, as material may be carried into the other bronchi, increasing the danger of bronchopneumonia. Where a considerable depth of lung tissue has been perforated in order to reach the abscess, it is well to mop the fresh area with chlorid of zinc solution, five grains to the ounce, in order to prevent fresh infection of lymph spaces from the pus. There will be a slight rise in temperature for a few days after the operation and cough will be increased.

To prevent atelectasis or collapse of the lung, sterile water or air may be slowly injected in advance into the pleural cavity. If collapse occurs the opening may be hastily closed by tamponing with gauze or the finger, and intrapulmonary pressure increased by an artificial respiration apparatus. The lung also may be grasped, brought into the wound and fixed with sutures.

The leakage of air into the pleural cavity from a bronchus that has been opened by ulceration is not as serious in the production of pneumothorax as is the case in a fresh wound of the bronchus. This is well illustrated by a series of experiments that I have reported,[4] where, after an incision of the bronchus, the efforts at respiration after the closure of the wound tended constantly to increase the quantity of air outside the lung, its re-entrance into the air passages being prevented by valve action due to the tubular shape of the bronchus. In a wound of the bronchus, moreover, increased intrapulmonary pressure by a Fell O'Dwyer or other respiratory apparatus would tend to increase the pneumothorax.

Wills[5] has operated on two cases of lower lobe abscess. The first man had had pleurisy, and presented signs of a cavity in the left lower lobe posteriorly below the scapula. Also showed signs of consolidation at apex. Each morning vomited a pint of pus; had night sweats, tubercle bacilli and elastic fibers were found microscopically. The sixth rib was excised in the anterior axillary line, where there was redness and signs of pointing. On opening the pleural cavity the patient collapsed, and the operation was obliged to be suspended. A drainage tube was placed in the pleural cavity. On the ninth day the abscess burst, and fetid gangrenous pus poured from the wound and through an opening in the bronchus. The wound was drained and the man sent into a healthy mountainous region. In five months cough and expectoration ceased; twenty months afterward no sign of abscess, was working hard, and gained seventy-five pounds; has since continued well and strong. This was one of the class of cases which I have already enumerated as being more hopeful than cavities of the apex.

Wills' second case had had pleurisy twice. Cavity in right lung posteriorly. Tubercle bacilli found in sputum. Two inches of the eighth and ninth ribs were excised posteriorly. There was partial adhesion of two layers of the pleura, but no pus in the pleural cavity. Wills[6] speaks very favorably of his result in the first case, and advises the operation, especially when septic symptoms are due to imperfect drainage through the bronchi. He believes that it is good, conservative surgery, saving life and giving comfort. Porritt advises that the cavity of the apex be reached from behind, not in front, incision being made above the scapula and portions of the second and third ribs resected. In 50 tuberculous autopsies at the Philadelphia hospital, the adhesions were found both in front and behind the apex in 33 cases; in front, 10; behind, 7. Tuffier, who has had experience with pneumonotomy, considers the dangers great when there are no adhesions, and has been compelled by pneumothorax to abandon his operations in 8 cases; 2 died immediately; in 2 the focus was not reached; one recovered from the operation, and was again subjected to operation two months later; in only one case was the focus reached at the time of operation. Sonnenburg from his experience also emphasizes the dangers both from pneumothorax and from hemorrhage.

EXCISION OR PNEUMONECTOMY.

Excision of a portion or the whole of the lung has been successfully tried, both experimentally and in the human subject. Tuffier reports a successful case of removal of a consolidated apex, with the patient living four years later in good health. Doyen and Lowson also report successful cases. Ferguson operated on one patient three times: first, opened abscess; second, excised ribs; third, pneumonectomy; final result, apparent cure. Ruggi also had 2 cases, both died. Hofmokl records 5 cases of pneumonectomy, the apex removed in two cases; both died quickly. Bloch[7] excised at one operation both tubercular apices. The patient died on the table and Bloch, being censured by the coroner, committed suicide.

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[4] Trans. Amer. Surg. Assoc., 1891, ix, p. 345; also, Amer. Jour. Med. Sciences, December, 1891.

[5] THE JOURNAL A. M. A., Jan. 5, 1901, p. 19.

[6] THE JOURNAL A. M. A., Jan. 5, 1901.

The chief dangers are pneumothorax, hemorrhage and the tearing of other thoracic organs. If there are no adhesions, the lung must be quickly grasped, drawn into the opening and sutured around the margin.

My own experiments, detailed in this paper and in other places,[8] as well as those of many others, show that considerable portions or even the entire lung may be excised, ligated, cut or cauterized off, and the stump returned to the cavity without serious injury to the animal, but unless the operations are done with thoroughly antiseptic precautions, gangrene or empyema are likely to result. A dog is so likely to die under anesthesia, and pneumothorax is so serious a condition with his defective mediastinum, that the best technic seems to be a rapid incision after resection of the ribs, then grasp and drag the lung into the opening, stitch the pleura and lung with catgut, ligate firmly, put in a catgut drain, suture the skin, cover with sterile gauze and apply plaster of paris girdle. By this method the stump in the lung will heal in the wound without pleurisy, and the remainder of the lung will remain active, as the pneumothorax is relieved.

Rabbits have survived completely after excision of an entire lung; human beings doubtless would not. Wills[9] did ten pneumonectomies on rabbits, most of them suffering but little from the operation. Zaharowitch also had fair results, as did Patek and Sailer. Biondi performed pneumonectomies on sixty-three animals, all of which recovered after excision, and Ricketts has had excellent results in his many experiments covering the whole field of lung surgery.

STATISTICS OF PNEUMONECTOMY.

Salomoni reports 2 favorable cases; one lived four years, dying of tubercular peritonitis; another two years, death from tubercular meningitis. He records 38 pneumonotomies for tuberculosis; 28 cured, 8 deaths, 2 doubtful. De Cérenville 4 cases of pneumonotomy; 3 deaths. Poirier and Jonnesco in the Paris Congress of Tuberculosis, 1891, reported 29 cases of incision and drainage of tubercular apices; 4 cured, 15 improved, 9 deaths, 1 unknown. Sonnenburg 4 operations, 1 cure, 3 deaths. Hofmokl 5 pneumonectomies. Kronlein 2 pneumonectomies. Groux of Brussels is reported by Bouchout to have had 13 pneumonotomies many years ago. Heydweiller collected 42 cases; 23 deaths, 15 improved, 4 relative cures, 45 per cent. recoveries. Ricketts' collection shows after operation in tubercular cases 60 per cent. recoveries, indicating that surgery of the lung is beneficial. Trzebicky's collection of 24 operations on tubercular cavities gives 5 complete cures (1 living three years after operation), 5 not healed, 9 deaths, 5 results not known. Tuffier, 8 cases pneumonotomy; 2 died immediately, 1 in a few hours, in 2 the focus was not reached, 1 recovered, focus opened four months later. and in one only was the focus reached at the time of operation. He collected 26 pneumonotomies for tubercular cavities; 13 recoveries, 13 deaths; 50 per cent. recoveries. Pneumonectomy, 1 death, puncture 1 case, 1 recovery. Thoracoplasty 3 cases; 2 recoveries, 1 death. Incision of additional abscesses, 5 operations; 4 recoveries, 1 death. Total, 36 cases; 20 recoveries, 16 deaths. Tuffier in his address at the Moscow congress records 306 pneumonotomies for all forms of lung abscess, chiefly gangrene; 217 cured, 88 died, 71 per cent. recoveries.[10] Murphy's[11] statistics show 47 cases of tuberculosis operated on; 34 incision and drainage, 2 pneumonectomies, thoracoplasty 5, opening of superficial abscess 4, puncture and drainage 2; recoveries 26, recoveries with fistula 2, deaths 19.

OPINIONS OF WRITERS.

The following condensed opinions of various authors and operators have been collected:[12]

Jacobson.—Pneumonotomy and pneumonectomy for tubercular cavities have been attended with results so unsatisfactory that they can not be recommended unless possibly under very exceptional circumstances.

Koenig.—To perform such an operation the surgeon must ignore absolutely all his knowledge of pathology. (Peyrot.)

Keyes.—In tuberculosis the wide distribution of the lesions and general conditions forbid any operative interference.

Godlee.—Tubercular cavities should not be opened except in cases where the cough is harassing and the cavities single.

Bouchout.—Surgical treatment is contraindicated in tubercle.

Biondi.—Occasional cases of phthisis may be saved from death by operation.

Warren-Gould.—Pneumonotomy for tubercular cavities has not yielded favorable results, as the cavities are usually multiple. When the tuberculosis is advanced sufficiently to justify operation it is rarely limited to the apex only. In the early stage, which is the only time when total removal is possible, diagnosis is uncertain, and we can not expect, therefore, that the operation will be found applicable in many cases.

Powell.—Pneumonotomy offers but little hope, as the cavity is not often single.

Dandridge.—The fact that the removal of the local tubercular lesion does not necessarily relieve the system makes the operation uncertain in its benefits.

Yeo.—Temporary benefit is about all that can be expected.

Mosler.—Tubercular cavities should not be opened by the surgeon until an antiseptic is discovered which will destroy tubercle bacilli. Although the operation is possible, it should be employed only in exceptional cases.

Taufert.—Operation is inadvisable on account of the liability to hemorrhage, the dangers of pneumothorax and its uselessness.

Berliner.—Pneumonectomy is to be condemned.

Kocher.—Surgery in apical pulmonary tuberculosis is questionable because of the presence of tuberculosis in other parts of the lung.

Quincke.—Pneumonotomy is a dangerous operation.

Reclus.—Pneumonectomy for tuberculosis is to be condemned. If the disease is extensive the patient is too far gone, and if the disease is circumscribed medical measures are as good and much safer. Statistics are not wholly reliable, as recoveries are more likely to be published than deaths.

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[7] Walton: Boston Med. and Surg. Jour., 1883, cviii, 261.

[8] Willard: Univ. Med. Mag., 1892, p. 333; Trans. Phil. Coll. Phys., xiii, p. 133.

[9] The Journal A. M. A., 1893, August 26, p. 296; also Southern Cal. Pract., Los Angeles, 1892, vii, 167.

[10] Tuffier: The Journal A. M. A., 1898, xxx, p. 169.

[11] The Journal A. M. A., vol. xxxi, pp. 151 and 346; also Syllabus, published in 1898, p. 11, and Reprint, p. 54.

[12] From the original articles by Dr. Eugene Lindauer.

Ruggi.—Tuberculosis of the lungs is beyond the surgeon's interference.

Quenu.—Pulmonary surgery in tuberculosis is usually unsuccessful.

De Cerenville.—Operation dangerous. Five deaths in six cases.

Hahn.—Operation is unsatisfactory.

Porritt.—The treatment of tubercular lesions of the lung by drainage is an attempt to attain that which with few exceptions has thus far proved to be the unattainable.

Verneuil.—Operation is justified only in a few cases, where there is a single focus and the condition good. The abscess wall should be cauterized.

Hughes Bennett.—Operative interference in phthisical cavities has been a uniform failure.

Albert.—Results prove that pneumonotomy should not be done in tuberculosis and that pneumonectomy is never advisable in that disease.

Heitler.—Tubercular cases of any description are not operable by pneumonotomy or pneumonectomy.

Heydweiller.—Pneumonotomy is useless, since the disease is not cured by operation and the patient subsequently dies. Conclusions based upon forty-two cases, with twenty-three deaths, fifteen improvements and four relative cures.

Ricketts.—After operation in tubercular cases 60 per cent. recover. In 306 cases of pneumonotomy for various causes, tubercular and non-tubercular, 71 per cent. recovered, showing that surgery is beneficial.

Bull.—In rare cases of tuberculosis, where a large cavity is the predominating condition, the cavity may be laid open with a view to improvement of the patient and as a palliative.

Koch.—Pneumonotomy would be helpful in strictly localized tuberculosis of the lung, a condition which is of rare occurrence.

Krecke.—Operation is indicated when the cavity is single and there are symptoms of septic absorption.

Leser.—The excavation, especially if it is large, should be opened through the chest wall to permit purulent contents to escape. This operation should especially precede the use of Koch's tuberculin, since after tuberculin is used the discharge is too great to be removed by expectoration.

Wills.—Emphatically favors pneumonotomy in the early stages as good conservative surgery, saving life and giving comfort.

Garre.—Pneumonotomy is advisable in rare cases.

Kummel.—Operative interference is indicated when the cavity can be definitely located and stagnating conditions produce grave symptoms.

Richerolle.—Pneumonotomy in very large tubercular cavities is allowable, but not if they are numerous.

Rochelt.—Operation is justifiable if the symptoms are severe, or hemorrhage frequent, or the cavity is superficial. When the process is active and the temperature high, no operation.

Bloch.—Operation favorable in hemorrhage of the lung.

Sarfert.—Little encouragement for operation, yet is sometimes advisable, especially if the disease is circumscribed and the symptoms not severe.

Poirier and Jonnesco.—Have collected many cases. Favor operation, especially in the cases where the abscess forms in the lower lobe.

Fowler.[13]—Difficult to outline the exact cavity and to know when there are adhesions. The question of adhesion is a very important one as regards pneumothorax. If the disease is quiescent, operation not advisable; if the disease is advanced, it is useless.

Da Costa.—Operation is unjustifiable if the cavities are multiple and not circumscribed, or if the disease is progressing. Advise against pneumonectomy.

Sonnenburg.—Has abandoned the operation as useless, although one of his patients lived five years. Only those cases operable, where the disease is circumscribed, the cavity favorably located, the patient fairly strong and without hectic fever. The opening should be free.

Neve.—Successful case of drainage and application of creosote locally.

Manclaise.—Operation limited to circumscribed tuberculosis, without surrounding infiltration.

Salomoni.—Operation is of value in single cavities, but in spite of a few fortunate results is not to be commended except occasionally.

Tuffier.—Favorable to the operation, and yet he acknowledges that in only one case was he able to reach the focus at the time of the operation. Injections have proven themselves valueless. Pneumonotomy relieves symptoms if free drainage is secured.

Turban.—Operation advisable if one lung is healthy, even if the other is seriously diseased.

Murphy.—In advanced disease pneumonectomy is inadvisable, and in the early stage patients will not consent. Pneumonotomy gives a chance for free drainage and lessens the septic symptoms.

Wood.—Incision and drainage of a tubercular cavity is indicated when there is limited tubercular involvement and when the patient is suffering from the septic effects. These symptoms are ameliorated by pneumonotomy, and while a case is occasionally cured the majority die. Pneumonectomy is unjustifiable.

Ferguson.—Drainage and injection of iodoform give good results.

Ewald.—Operation is advisable.

Casini.—A circumscribed tubercular process may be attacked by surgical interference and the cavity treated with as much reason as one in a tubercular bone. A single cavity, even though it is deep, should be drained to prevent general infection.

Fabricant.—Pneumonotomy is advisable when the symptoms of infection from the cavity overshadow all others.

CONCLUSIONS AS TO HUMAN SURGERY.

1. With improvement in technic pneumonotomy will become a practicable operation, even in cavities at the apex. The operation would be especially helpful in the early period of cavity formation, but it is exceedingly difficult at this stage to obtain the consent of the patient, since hygienic and dietetic methods of treatment often result in cure.
2. In advanced cases, both tubercular and streptococcic infection are often present; the cavities are usually multiple and the operation can not cure. It may be employed, however, as a palliative to cough, hemoptysis and sepsis.
3. In abscess of the lower lobes, following pneumonia or pleurisy, whether tubercular or not, incision and drainage is to be recommended in any stage.
4. Pneumonectomy in our present stage of surgical and diagnostic skill is not advisable in tuberculosis.

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[13] Trans. Amer. Surg. Asso., 1896.

5. With improved technic tubercular foci will in the future be eradicated, as we now eradicate tuberculosis in joints and other tissues. An efficient and certain method of producing strong adhesions between the two layers of the pleura at the site of the disease is the most important step in this technic.

6. The careful and methodical application of auscultation, percussion and the *x*-ray for the accurate locating of the diseased focus, is also an important factor in securing a safe operation.

7. Pneumothorax is so serious a menace to life that in all operations on the lung, an artificial respiration apparatus, like the Fell O'Dwyer or Matas instrument, should be at hand, together with a full jar of oxygen.

EXPERIMENTAL TECHNIC AND RESULTS.

For the primary induction of tuberculosis in the dog, injection with a long hypodermic syringe was made into the lung in the third interspace on the right side, one and one-quarter inches from the midsternal line, under thorough antiseptic precautions, and the results awaited.

The material used for infection was from 2½ to 3½ c.c. of a growth of tubercle bacilli, ground up in a sterile tube with sterilized water until in appearance and density the mixture was equal to a twenty-four-hour culture of typhoid. This made a white, thin, milky fluid, which flowed easily from the hypodermic.

For the secondary operation the animal was always given a full dose of morphia (one-quarter to one and one-half grains) an hour before etherization. The area operated on was first shaved, scrubbed with soap, then with alcohol, ether and bichlorid or turpentine and surrounded with sterile towels. Instruments and hands were thoroughly sterilized and all preparations made as in human operations.

The ether was administered by cone, as chloroform will kill, and a Fell O'Dwyer artificial respiration apparatus kept on hand, by the use of which life can be maintained in many cases where otherwise the animal will die. As the introduction of the tube through the mouth is too risky to the operator, it is better to open the larynx when necessity arises and insert the tube into the trachea, the inflation of the lung then being slowly and regularly maintained.

Silkworm suture; catgut drainage, or gauze; sterile gauze dressing; plaster of paris bandage. May dress with iodoform and collodion or with turpentine. In ligating lobe of lung, kangaroo tendon or chromicized catgut. Dogs were usually redressed on the second or third day, and, if clean, were allowed to go for several days. Whenever suppuration was found, dressed every two days, the wound being washed with bichlorid.

In some cases the dogs after injection of tubercle began to lose flesh at once, and in a month the loss was from two to four pounds; others developed a cough, but as the sanitary conditions in confinement and in the cellar were unfavorable, progress was, of course, naturally active. In spite of this several cases did not show any tubercular lesion even weeks after the injection. Many of the dogs showed foci of tuberculosis through the lobes of both lungs, the infiltration in many cases being as great in the opposite lobe as in the one injected. The mediastinal glands were usually found implicated. The lung tissue intermediate to the foci was usually normal. In a few cases the lower lobe was densely infiltrated with tubercular pneumonia. In none of the cases were the other organs affected nor the bones. One dog only died from tuberculosis (No. 3), living from September 2 to November 4. In three or four cases there was a localized abscess in the lung apparently not from the injection, but from the infection through the bronchi.

The dangers of the operation are illustrated by the fact that 4 died during the operation from pneumothorax; 2 others within thirty-six hours, one from hemorrhage into the bronchi from pleural suture, one from sepsis of lung abscess, from cutting off of blood supply of lung tissue by preliminary suture of pleura; 2 cases of pneumonectomy died of purulent pleurisy.

The dyspnea from pneumothorax during operation was always greatly relieved by grasping the lung and holding firmly in place. Incision into the lung of a dog, if sutured, will recover almost certainly, and also excision of a wedge-shaped piece. Puncture and incision of the lung recover. An entire lobe can be safely removed. A strong dog will probably survive removal of entire lung. Excision of diseased lung, of course, will not interfere so seriously with respiration as would the removal of a healthy lung. The lung should not be ligated en masse, but in small portions; the bronchus and its vessels should be ligated independently. The open end of the bronchus should be sutured.

DEDUCTIONS FROM EXPERIMENTS.

The production of adhesions is a most important part of the operative procedure. If these can be secured, either artificially or if they are present from the disease itself, the operation is not more serious than many major operations.

In the human being the position of the abscess can be much more definitely fixed than in the dog by auscultation, percussion and the *x*-ray. Operation, therefore, becomes one of greater certainty. If slight adhesions only are found, immediate stitching of the lung to the walls around the margin of the opening, while not avoiding pneumothorax, may escape pyothorax. If pneumothorax occurs, the most speedy method of relief is that of dragging the lung into the opening and fixing it, thus giving greater action to the opposite lung. Excision of the diseased area would be the best operation, provided the entire tuberculous portion could be definitely removed, a condition which at present does not seem possible. In dogs even a collapsed lung becomes functionally active in a few days after excision of a portion.

Experiment* 1.—Dog, 15 pounds. Injection 3 c.c. emulsion tubercle bacilli, right upper lobe, Aug. 26, 1901; ¾-grain morphia given previously. September 2 no ill effects; September 5 small abscess circumscribed at point of injection; September 20 loss of 1¾ pounds. Still losing flesh.

Operation.—Thirty-ninth day, one-half grain morphia given 20 minutes previous to etherization. Incision 2½ inches long, third interspace. With a long curved needle, silk ligature was carried through intercostal space, penetrating lung and brought out 1½ inches distant. Tied sufficiently firmly to bring visceral pleura in contact with parietal, intending to place similar one in fourth interspace and cross sutures at ends of these two, in shape of parallelogram to produce adhesions. Immediately after the passing of the first suture, however, bloody froth appeared at the mouth, respiration became difficult and in spite of the injection of 1/60 grain of strychnin and forced artificial respiration, the dog died quickly.

Postmortem.—Small coagulum in right pleural cavity; no other blood or fluid in pleura; no pneumothorax. Needle had evidently punctured a large pulmonary vein, and the bronchi were filled with blood. Air probably entered the veins from the perforated bronchi, as the heart was flabby and contained frothy blood, especially in the right auricle. Upper lobe entirely consolidated with tubercle; the two lower lobes normal, but the infiltrated lobe was yellow. Firm adhesions were present from the site of the injection to the apex, one and one-half inches wide; all other portions of lung free. Posterior mediastinal lymphatic glands enlarged to size of pigeon eggs; one anterior mediastinal gland also infiltrated. Abdominal organs healthy. One mesenteric gland enlarged.

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* The experiments detailed were conducted at the Pepper Clinical Laboratory of the Hospital of the University of Pennsylvania, with the assistance of Drs. George M. Purves and Eugene Lindauer, without whose help they would have been impossible.

EXPERIMENT 2.—August 26. Dog. Weight 29 pounds. One and one-half grains morphia given; 3 c.c. emulsion tubercle bacilli injected into right upper lobe. Puncture sealed with gauze and collodion. September 27 loss of 7½ pounds. October 1, cough and expectoration; latter could not be obtained for microscopic examination.

Operation.—October 3. Morphia, ½-grain, 20 minutes before etherization. Fourth rib resected; accidental opening in the pleural cavity; adhesions were found slight; parallelogram suturing; pneumothorax was marked, but did not give extreme dyspnea. Death 36 hours later.

Postmortem.—Right lung entirely collapsed, 3 drams bloody serum in right pleural cavity. No large tubercular area of consolidation, but over entire pleura were numerous yellow foci, and in the upper lobe of the lung some yellow foci, which had not broken down. Anterior and posterior mediastinal glands enlarged, size of lima beans. Left lung partially collapsed, but upon the parietal pleura and the surface of the lobes of the left lung were nodules similar to those in the right. In the right lung there were no adhesions to the pleura at the site of the injections, but there were firm adhesions over the area of half an inch at the apex. No other adhesions in either right or left. Other organs healthy.

EXPERIMENT 3.—September 2. Injection 1½ inch to right of mid-sternal line, 3.5 c.c. emulsion tubercle bacilli. No cough, but progressive loss of weight, with weakness. Died November 4. Had cough and expectoration, but not enough to collect for microscopic examination.

Postmortem.—Markedly emaciated; right pleural cavity small amount of bloody serum; apex of right upper lobe consolidated with firm adhesions to ribs 1¼ inches in diameter; beneath these was a cavity in the lung substance an inch in diameter connected with the pleural cavity; space contained thin turebcular pus. In lobe of right lung, two similar tubercular consolidations; posterior mediastinal glands enlarged; anterior glands size English walnut; other organs healthy.

EXPERIMENT 4.—September 9. Weight, 34 pounds. Morphia 1¼ grains; injection of 3.5 c.c. tubercle bacilli emulsion. As there was no loss of weight, October 18 additional 3 c.c. injected in the same area.

Operation.—November 4; 3 inches of rib excised; area around point of injection sutured off in a parallelogram with silk carried through the substance of the lung, and sutures tied merely to bring surfaces in apposition. Dressed with sterile gauze, plaster of paris outside. Owing to an error, pneumonotomy was not done, as it should have been on the second day. Dog lost flesh and died November 29. Sinus at point of wound; right lung was strongly adherent as low as the third rib; the upper lobe condensed, but no positive tubercle foci; small abscess at the point of operation; glands not involved.

EXPERIMENT 5.—October 8. Weight 27 pounds; morphia, 1¼grains; injection 4 c.c. tubercle bacilli emulsion into right lung. November 2, dog greatly emaciated, scarcely able to stand.

Operation.—November 5. Lung sutured to wall as before. Wound made in pleura and dog died speedily, in spite of artificial respiration with Fell O'Dwyer apparatus; strychnin and digitalis.

Postmortem.—No adhesions nor effusion on either side. Both lungs evenly infiltrated with yellow tubercular nodules varying in size from a pin to that of a bean, a few of them breaking down in the center; no deposits in pleura nor in abdominal organs.

EXPERIMENT 6.—November 7, 18¾ pounds; 1 grain morphia given; ether; 2 in. incision over third rib. Visceral and parietal layers of pleura approximated by silk sutures, plaster of paris with the intention of producing adhesions before making the tuberculin injection. Next day 3 c.c. tubercle bacilli emulsion injected into the lung. November 29: dog has lost flesh rapidly.

Operation.—Previous incision healed by first intention except at lower angle where sinus persisted and through which much air entered; sinus leads into the lung through second interspace; acute pneumothorax followed the incision into pleura and dog died in five minutes.

Postmortem.—Right lung collapsed. Strong adhesions along lower margin of second to fourth rib, which could not be torn with moderate pressure of finger. The longitudinal sutures had evidently produced adhesions, but the transverse sutures had not, as they had been passed beneath rib from the second to third interspaces; lung not infiltrated.

EXPERIMENT 7.—November 12, 11 pounds, one-half grain morphia; ether; longitudinal sutures, first and second intercostal spaces 1¼ in., united by cross suture at ends around second rib; 2 c.c. emulsion of tubercle bacilli injected at end of operation.

Operation.—December 28. Incision through old scar, third rib resected subperiosteally. When pleura was opened acute pneumothorax developed, with great dyspnea; rapid tracheotomy performed; Fell O'Dwyer artificial respiration inflation practiced, with success in reviving; upper lobe of lung pulled into incision and sutured with catgut; projecting portion ligated with silk and cut off; wound closed with drainage; tracheal wound closed; sterilized gauze and plaster of paris bandage. Next day respiration 40; plaster stained with offensive discharge; lung slipped from its anchorage; collapse from the pneumothorax; drainage tube inserted; pleural cavity washed with boric acid solution.

Postmortem.—January 2. Right pleural cavity infected; yellow pus; adhesions at apex, but no consolidation in either lung; lung had slipped from anchorage; no evidences of hemorrhage; tracheotomy wound healed first intention.

EXPERIMENT 8.—December 12. Preliminary suturing of lung to chest wall with silk suture; 3 days later injection 3 c.c. tubercle bacilli emulsion; 11 days later, cough.

Operation.—January 24. Third rib resected subperiosteally 1½ in.; pleura was opened; breathing became labored, but not to an extreme degree. Tracheotomy done and artificial respiration apparatus used; dog revived. Adhesions were firm, but did not completely surround the line of incision. Lung pulled into opening and sutured to chest wall. Packed with sterile gauze. January 29, dog dressed. Air escaped from site of sutured lung.

Second Operation.—February 5. Second rib excised. When pleura was opened adhesions only partial, and pneumothorax followed; as the lung was adherent, symptoms were not serious; palpation of lung failed to find any consolidated area or cavity. Wound was packed, and a second injection of tubercle bacilli emulsion made into upper lobe. March 12: No apparent loss in weight, dog apparently normal.

Third Operation.—Lung exposed and palpated, but no cavity found, although incisions were made in one or two directions into the lung. Hemorrhage checked by packing with gauze. Died 24 hours after third operation.

Postmortem.—Upper lobe right lung adherent opposite second and third ribs; firm, anteriorly to the extent of 1½ in. Upper lobe shows mark of incision; pleural cavity contained much red clotted blood, but was otherwise normal; no tubercular infiltration in any portion of right or left lung; abdominal organs healthy.

EXPERIMENT 9.—December 12. Small dog. Pleural surfaces sutured as before; 2 c.c. tubercle bacilli emulsion injected in right upper lobe. January 15: no emaciation. Eating; drinking; lively.

EXPERIMENT 10.—Preliminary suturing of pleural surfaces. December 14, 3 c.c. tubercle bacilli emulsion injected.

Operation.—January 14. Preliminary incision made over trachea, not dividing rings. Incision, line of previous scar. Preliminary sutures of silk found. Fourth rib excised; adhesions around area firm; lung opened; penetration with grooved

TABLES (carefully prepared for me from the original publications by Dr. Eugene Lindauer).

No.	Reference.	Sex and Age.	Seat and Character of Disease.	Condition of Patient.	Adhesions.	Operations.	Immediate Results.	Final Results.	Autopsy.
1	Hastings & Storks: Lond. Med. Gaz., 1844-5, ii, 378.	Male, 38	Cavity left upper lobe; consolidation right upper lobe.	Very low; hemoptysis, emaciation, cachexia, etc.	Yes...	Pneumonotomy and drainage	Improved. . .	Discharged very much better	
2	Wells: Edinb. Med. and Surg. Jour., 1846, lxv, 11.	Male. . .	Cavity in right upper lobe with axillary abscess.	Slowly losing ground.	Yes..	Incision of abscess communicating with pulmonary cavity; pus and air; drained.	Gradual improvement	Discharged without fistula; patient living in 1882 at age of 70.	
3	Bouchout: Gaz. Méd. de Paris. 1854, p. 126.	Male. . .	Cavity in right lung .	. . . .	.	Puncture chest wall, large trocar: pus and tubercular debris	Great improvement .	Death 15 months later. . . .	Cavity partly cicatrized
4	Bouchout: Ibid.	Male, 28	Cavity in left apex. . . .	Symptoms of cavity; hectic fever, etc.	.	Pneumonotomy with cautery and knife.	Gradual improvement	. . . .	
5	Mosler: Berl. Klin. Woch. 1873, x, 509.	Male, 49	Large cavity in right upper lobe.	Cavity signs; symptoms adv. cachexia	Yes..	Thorough cleansing of cavity; drainage, silver canula.	General improvement	Death 3 months later . . .	Gen. tubr of lungs; amyloid disease of other organs.
6	Williams: Brit. Med. Jr., 1878, ii, 101.	Male, 28	General pulmonary tuberculosis; cavity left lower lobe.	Cavity signs; symptoms of adv tubr.	No .	Puncture in seventh interspace; much fetid pus escaped; lavage.	Considerable improvement.	. . . .	
7	Sadler: Lancet, 1879, i, 84.	Male, 38	Cavity in right lower lobe . .	Signs of a cavity; emaciation, weakness, shortness of breath.	Yes..	Incision tenth interspace, front angle of ribs; trocar; no pus; cavity formed with finger; drainage.	Slight improvement	Death 14 days after operation	L. lung tubr and adhesions of apex only; r. lung adherent throughout; almost entire lung is a cavity; base of lobe solid; operation into solidified base.
8	Sommerfeldt: Hosp. Tidende, 1882, p. 257.	Male, 31.	Large cavity in right upper lobe.	Signs of a cavity; hectic temperature, fetid expectoration.		Puncture of cavity, second intercostal space; opening with cautery; drainage.	No improvement. . .	Death 28 days after operation	
9	Bull. Nord. Med. Ark., 1882, 14, No. 26.	Male, 29	Cavity in left apex..	Signs of cavity; cachexia.	Yes ..	Incision above second rib. Walled off pneumothorax; cavity not found; drainage; next day spontaneous rupture; much pus.	No relief	Death on 7th day	Circ'mscrib'd pneumothorax; tubr. infiltra. both apices; large superfic'l cav. l. apex; 3 cm above opera. wound.
10	Ruggi: Raccoglitore Mediko, 1882, Centr. f. Klin. Med., 1883, iv, 782.	Female, 30	Cavity in right upper lobe .	Signs of cavity . .	Yes..	Resection of second and third ribs. Opening of pleura, separation of adhesions; removal right upper lobe, using Billroth's clamp	. . . . . .	Death on 9th day; collapse due to carbolic acid poisoning following the washing out of cavity.	Tuberculosis of left upper and right middle lobes.
11	Ruggi, quoted by Heitler. Centr. f. die gesammte Therapie.	Female..	. . . .	. . .		Resection .	Death after 24 hours.	Death after 24 hours	
12	Frankel, quoted in Truc, Thèse de Lyon, 1885, p. 78.	Male. .	Cavity in left apex . .	Signs of cavity; symp. of mixed infection and advanced tubr.	.	Pneumonotomy; drainage; insufflation of iodin and phenol.	. . . .	Death of hemoptysis within a few days.	Large cavity with granulating walls.
13	Truc: Ibid, p. 79 . . .	Male, 38	Cavity in anterior surface of right apex.	Very severe pain under right clavicle.	Yes...	Pneumonotomy; pus, air and gangrenous debris; drainage.	Pain not relieved. . .	Death on 15th day	Bilateral tuberculosis; cavity was opened.
14	Truc: Ibid	Male, 47	General pul. tuberculosis, fistulous tract opening outside of nipple; cavity in r. apex.	. . . .	. . .	Enlarged tract and opened cavity freely; one pint of pus escaped; drainage.	Recovered	Six and one-half months after operation condition is satisfactory.	
15	De Cérenville: Rev. Méd. de la Suisse, rom., 1885, v, 441.	Female, 15	Large cavity in left upper lobe.	Hectic fever; signs of a cavity.	No .	Resection second and third ribs; pleura sutured; four days later pleurotomy and pneumonotomy.	. . . . . .	Death on 16th day, due to pulmonary embolism and cachetic thrombosis.	Both lungs riddled with cavities; wound looked nice.
16	De Cérenville: Ibid .	Female, 25	Infiltration of upper left lobe with cavity	. . . . . .	Yes .	Pleura adherent; pleura and lung opened; cavity beneath clavicle.	No improvement . .	Death 6 weeks later; due to miliary tuberculosis.	Cavity began to cicatrize; miliary tubr. both lungs.
17	Neve: Lancet, 1887, i, 263.	Male.	Infiltration left apex; cavity in ant. surface up. r. lobe.	Symptoms of advanc'd tuberculosis.	Yes	Resection fourth rib; two small cavities opened with finger; drainage.	Improvement . . .	Discharged 4 wk.; no drain.; improv. contin. for months.	
18	Sézary et Vincent: Rev. de Méd., 1887, vii, p. 675.	Male, 22.	Cavity of lower right lobe; infiltration of right apex.	Typical symptoms of tubr.; cavity signs; no tubercle bacilli.	Yes .	Resection ninth rib; puncture with trocar; extensive opening; large cavity; drainage.	Very little improvement.	Death 9 days later . . .	Cavity base of tuberculous right lung opened; adhesions pleura and right lung. left apex tubercular.
19	Casini: Rivista Clin. e. Terap., 1887, No. 1.	Male, 40	Cavity on right side extending from third to fifth ribs.	Pain; fever; cough; hemoptysis; gradually much worse.	Yes	Resection fifth rib; cavity opened and cleansed with bichlorid sol. and iodoform.	General improvement; no fever after 15th day.	Progressive improvement . .	
20	Bruen: Proc Phila. Co. Med. Soc., 1887, viii, 203.	Male, 27	Infiltration upper left lobe; cavity in lower left lobe; slight infiltration of right apex.	Symptoms of advanced tuberculosis; signs of a cavity.	Yes .	Resection ninth rib on line angle of scapula; trocar; drainage; large cavity opened accidentally several days later.	General improvement	. . . .	
21	Cummins: Brit. Med. Jr., 1889, i, 194.	Male.	Cavity in lower lobe	. . . .	. . . .	Incision between seventh and eighth ribs; drainage.	. . . .	Great improvement	
22	Denison: Jour. Am. Med. Ass'n, 1890, i, 376.	Male, 26	Beginning consolidation in right lower lobe; cavity in left lower lobe.	Advanced cachexia .	.	Resection sixth and seventh ribs; cavity opened; vasolin and salol injected; drainage.	. . . .	Living 4 months later; very little cough and discharge; gaining weight.	
23	Tillmans: Brit. Med. Jr., 1890, i, 1363.	Male, 28	Leftsided empyema and tuberculosis of chestwall; advanced tuberculosis of left lung; pleura adherent to upper third.	Patient near death . .	Yes .	1st operation: Resection ribs, empyema. 2d oper: Removal of anterior chest wall between second and sixth ribs; left lung size man's fist; adherent; covered lung with pedunculated flap of skin from thorax; left open for local treatment; scraped left pleura. 3d operation: A month later transplanted skin to pleural cavity and changed it into a cutaneous cavity.	Lung shrank; spontaneous cure resulted.	Discharged cured 2 months later; living 2 years after operation, apparently well	
24	Spengler: Ver. der Gesellsch. deutscher Naturforscher u. Arzte, Bremen, 1890, ii, 237.	Female .	Large cavity in left upper lobe; tuberculosis of upper right and lower left lobes.	Advanc'd tuberculosis	No. .	Radical thoracoplasty; cavity not opened; collapse of wall of cavity follows operation; lung shrinks.	Gradual improvement	Seven months after operation patient presents neither cavity, nor tuberculous infiltration.	

25	Ledjard: Lancet, 1890, i, 964.	Male, 52.	Cavity in left upper lobe. .	Cough, expectoration, some emaciation.	. . .	Incision fifth interspace ant. axillary line; incision sixth rib; evacuation of pus; drainage.	No relief	Death on 4th day	Almost entire left lung is a cavity; right lung shows few tubercles.
26	Caselli: Raccoglitore Medic., 1891, xi, 235.	Male, 31.	Disseminated tuberculosis; cavity in right apex.	Signs of a cavity . . .	Yes .	Resection of second right rib; puncture; cavity opened and drained.	Improvement	Fifteen days after operation was improving.	
27	Krecke: Münch. Med. Woch., 1891, xxxviii, 399.	Male, 33.	Cavity in right lower lobe. .	Septic chills . .	Yes .	Costal resection; pleurotomy; pneumonotomy with dull pincette; cavity packed with iodoform gauze.	Improved; temperature normal; sitting.	Death from sudden hemorrhage.	
28	Kurtz: Wien. Medic Presse, 1891, xxxii, 1389.	Male, 30.	Cavity in left upper lobe. . .	Very low; cachexia . .	No. .	Incision second interspace; cavity opened with cautery; drainage; iodoform dusting.	Pneumothorax for 6 days; gradual improvement.	Well for three years; death due to acute diffuse tuberculosis of right lung.	
29	Hahn: Ver. d. deutschen Gesellsch. f. Chir., 1891, xx, 101.	. . . . .	. . . .	Good condition.	. . .	Pneumonotomy; drainage . . .	. . . .	Death about 3d week. . . .	General tuberculosis.
30	Hahn: Ibid	. . . .	. . . .	Good condition . . .	. .	Pneumonotomy; drainage	. . . .	Death 3 weeks after operati'n	Numerous cavities communicate with the one opened.
31	Hahn: Ibid	Fem., 22.	Cavity of left apex.	Signs of a cavity; expectoration fetid.	Yes .	Pneumonotomy; knife and cautery; iodoform packing; tuberculin was used; symptoms disappeared; cavity closed; symptoms returned; cavity reopened.	Improvement after both operations.	. . . .	
32	Leser: Münch. Med. Woch., 1891, xxxviii, 135.	Female, 42	Cavity of left upper lobe anteriorly and posteriorly; consolidation of rest of left lung.	Very weak; symptoms had existed for some years	Yes .	Removal first rib; pleurotomy; cavity punctured with trocar; opening enlarged with cautery; packing; used Koch's tuberculin	Gradual improvem't; tuberculin (locally & hypoderma ica'y) increases secretion.	Improvement.	
33	Leser: Ibid	Male, 42.	Small cavity of right apex. .	Symptoms existing for 3 years; typical.	Yes .	Operation as above.	Much improved . . .	. . . .	
34	Sonnenburg: Deutsch. Med. Woch., 1891, xvii, 21, and other places.	Male, 56.	General pulmonary tuberculosis; cavity of right apex; left lung little affected	Many tubercle bac.; signs of cavity; etc.	Yes .	Resection first rib; exploratory puncture; pneumonotomy opening of cavity; iodoform gauze.	Improvement; Koch's tuberculin was injected.	Cavity obliterated within 2 months; lived 5 years.	Old seat was cicatrized; new foci had formed.
35	Sonnenburg: Ibid. . . .	Male, 43.	Tuberculosis of both apices, cavity of left apex.	Advanced cachexia; signs of a cavity.	Yes .	Incision parallel with clavical puncture; pneumonotomy: cavity opened.	No improvement; Koch's tuberculin was injected.	. . . .	
36	Sonnenburg: Ibid	Male, 44.	Both apices affected, cavity left apex.	Disease existed 2 yrs.; symptoms of cavity.	Yes .	Puncture and pneumotomy; cavity opened.	No improvement. . . .	. . . .	
37	Sonnenburg: Ibid. . . .	Male, 35.	Tuberculosis of both lungs, cavity of right apex.	. . . .	No. .	Fourth rib resected; pleurotomy, partial pneumothorax, pneumonotomy.	No improvement; tuberculin was used.	Death during 7th week. . . .	
38	Roux: Rev. Méd. de la Suisse rom, 1892, xii, 567	. . . . .	Cavity in right upper lobe, posteriorly.	Signs of a cavity . .	No. .	Suture of pleura, pneumonotomy; small cavity opened with cautery; drainage 3 weeks later; principal cavity opened spontaneously.	Great improvement .	. . . .	
39	Roux: Ibid.	Female. .	Large cavity in lower lobe of right lung.	Signs of a cavity . . .	Yes .	Pneumonotomy, cavity opened with cautery; drainage.	Amelioration; drainage.	All signs of cavity disappeared.	
40	Lowson: Brit. Med. Jour., 1893, i, 1152.	Female, 34	Cavity of right apex, infiltration of upper right lobe.	Some emaciation; signs of a cavity.	. .	Resection 2d and 3d ribs; pneumothorax; collapse right lung; adh's upper lobe broken up, ligation of apex in two pieces, resection lung above ligatures, closure without drainage, pneumonectomy.	Barring a small localized empyemia, an uninterrupted recovery.	Discharged 10 weeks later almost well.	
41	Shurly: Jour. Am. Med. Asso., 1893, ii, 297.	Male, 48.	Cavities in l. u. lobe; balance consolid'ed; 1 cav. r. apex.	Very low	Yes .	Pneumonotomy; cavity very deep; drainage; chlorin gas injected.	. . . .	Death on 8th day from hemorrhage.	
42	Shurly: Ibid.	Male, 27.	Large cavity left apex; other cavities in same lung.	Very low	Yes .	Incision 3d intercostal space, cavity opened and drained, chlorin gas.	No improvement. . . .	Death on 24th day from exhaustion.	
43	Veje: Med. and Surg. Rep., 1893, ii, 1009.	Female, 28	Cavity in left lobe of lung, posteriorly.	. . . .	Yes .	Superficial incision, pus, gangrenous debris and gas.	Improvement. . .	Recovery	
44	White: Med. News, 1893, i, 38.	Female, 43	Cavity in lower right lobe. .	Typical symptoms . .	Yes .	Incision 6th intercostal space one inch front of axillary line; cavity drained; second operation one in. posterior to axillary line.	Improvement	. . . .	
45	Dandridge: Ann. of Sur., 1894, vol. xix, p. 129.	Male, 29	Cavity of right lower lobe infiltration of right apex. ,	Physical signs of a cavity.	Yes .	Resection eighth and ninth ribs, axillary line; evacuation of pus, debris and caseous material; boracic douche; drainage.	Improveme't follow'd by removal of drain; incision healed.	Respiratory sounds heard at much lower level than before; area of dulness diminished; general improvem't.	
46	Poirier: Bull. et Mem. d. l. Soc. de Chir. de Par., 1894, xx, 630.	. . . . .	Abscess of lung communicating with cavities in a tuberculous subject.	. . . .	. . .	Pneumonotomy and drainage.	. . . .	Recovery	
47	Doyen: Semaine Med., 1895, vol. xv, p. 419.	. . . . .	Large tubercular cavity . . .	Signs of a cavity . . .	. . .	Pneumonotomy; drainage.	. . . .	Death during same night . .	
48	Doyen: Ibid.	. . . . .	Tuberculosis	. . . .	. . .	Incision, pneumonectomy; piece size of an orange removed.	. . . .	Recovery	
49	Michaux: Ibid., 418. . .	Female, 20	Multiple cavities of right lung, especially lower lobe.	Long standing series of symp.; signs of a cavity.	Yes .	Resection of seventh and eighth ribs; pleurotomy; multiple punctures, lung cautery, drainage.	. . . .	Death three weeks later. . .	Numerous cavities; purulent bronchiectasis.
50	Michaux: Ibid.	Female, 25	Tubercular cavity	Signs of a cavity . . .	Yes .	Similar operation; eighth and ninth ribs removed; cavity not found.	. . . .	Death four weeks later, due to extension of disease.	Cavity in lower lobe; disseminated tuberculosis.
51	Salomoni: Clin. Chirurgica Milano, 1895, p. 65.	Male, 34	Tuberculosis of left lung. .	Symp of mixed infec.; no signs of a cavity.	Yes .	Fifth, sixth, seventh, eighth and ninth ribs resect.; pneumonotomy	. . . .	Much improved three months later.	
52	Tuffier: Sem. Med., 1895, p. 417.	Male, 25.	Tuberculosis localized to right apex.	Tubercle bacilli found in sputum.	No .	Suturing two layers of pleura to prevent pneumothorax; excision of apex with 2 cm. of healthy lung; wound closed without drainage.	Discharged cured on ninth day.	Living 4½ years after operation.	

No.	Reference.	Sex and Age.	Seat and Character of Diseases.	Condition of Patient.	Adhesions.	Operations.	Immediate Results	Final Results.	Autopsy.
53	Quincke: Mitteil aus den Grenzgeb. der Med. u. Chir., 1896, vol. i, p. 234.	Male, 46.	Cavity of right upper lobe...	Symptoms of advanced pul. tuberculosis; signs of a cavity.	No. .	Application of zinc chlorid to produce adhesion; 8 da. later cautery; no cavity found: 8 days later enlargement of wound; removal of 1st rib; cautery; no cavity found; week later removal of second rib; cavity opened.	Improvement of patient.	Death three years later . . .	Cheesy tuberculosis of both lungs in right upper lobe; several cavities.
54	Bier: Cited by Quincke, Ibid.	Male, 23.	Large cavity in right apex ..	Signs of a cavity . . .	Yes .	Subperiosteal resection; second and third ribs; a year later resection of second rib, cavity opened; cautery; resection, third, fourth, fifth and sixth ribs; drainage.	Retraction of chest wall during next few wk.; symp. dimin.; general emphysema at once.	Death 28 hours after second operation.	Right lung adherent to chest wall; upper lobe contains shrunken cavity; another cavity, egg size, middle and lower lobe full of tubercles; left apex has a scar; numerous tubercles throughout left lung.
55	Franke: Ibid, p. 688 . .	Female, 24	Cavity in right upper lobe..	Signs of cavity; sputum cont. tubr. bac.	Yes .	Resection of second rib: cautery; tamp. of iodoform gauze in cavity.	Great improvement .	Death 17 mos. later. influenza; fistula only 1½ cm deep.	
56	Bozzolo: Gazz. degli Ospedali, July 1, 1898.	Male, 36.	Cavity in right lung	All the symp. of tubr, but no tubr. bac.	1 No 2 Yes	Pneumonotomy followed by syncope; 2 months later again incised; 2 cavities drained.	. . . .	Recovery	
57	Tait and Abrams: Med. News, 1898, p. 263.	Male, 7.	Acute tuberculosis cavity in left lower lobe; later, signs of cavity in right apex.	. . . .	Yes .	Pneumonotomy and drainage; 1 yr. later resection of second, third, fourth and fifth ribs; pnemonotomy; drainage.	Great improvement after first operat'n; remained well 1 yr.	Death 28 hours after second operation	
58	Malbot: Arch. provin de Chir., 1898, No. 12, 1899, Nos. 1 and 2.	Male, 29.	Cavity in left upper lobe; tuberculosis of right lung.	Symptoms of cavity; symp. of advanced tuberculosis.	Yes .	Cavity opened and drained; water, potass., permang., tinct. Cl_2 sol. 1:15 for cleansing and cauterizing.	General improvement	Wound closed in 3 months' time; apparent recovery.	
59	Mayo: Northw. Lancet, 1898, xviii, 441.	Female, 38	Cavity of left lower lobe . . .	Signs of a cavity .	Yes.	Incision at posterior, anterior and axillary line; cavity opened and drained for 3 wk.; 3 ribs resected.	Great improvement at first.	Death after 5 months, from spread of disease.	
60	Karewsky: Vertrage d. deutschen Ges. f. Chir., 1898, xxvii, pt. 2, 285.	Female, 30	Cavity in lower left lobe; pleurisy.	Signs of a cavity; hectic fever, etc.	Yes . .	Resection of eighth, ninth, tenth and eleventh ribs: cavity ruptured into pleural cavity; cheesy material curetted from pleura and lung cavity; drainage; curettement several months later.	Improvement for several months.	Since second operation disappearance of all symptoms.	
61	Salomoni: Cong. of Ital. Surg., Oct., 1898.	Male, 22	Cavity in lower lobe of left lung; empyema.	Tubercle bacilli in discharge from empyema fistulæ.	Yes .	Resection of ribs (6th-11th); pleura opened with cautery; 2 cavities in lung below; purulent collection; curettement; drainage.	Improved quickly . .	18 months later condition fair; right lung good; one fistula remains over left lung.	
62	Strapesko: Ann. of Russian Surg., 1899.	Female, 25	Tubr. cavity had opened externally; it appeared to be caries of ribs.	. . . .	. . .	Cavity opened; curetted with spoon; tamponed.	Improved..	Healed soon.	
63	Strapesko: Ibid.	Male, 36	As above	. . . .	. . .	Identical procedure	Improved.	Healed soon	
64	Turban: Berl. Kl. Woch., 1899, xxxvi, 458.	Male, 21.	Infiltration of right upper lobe; almost entire left lung is one cavity.	Typical symptoms and signs.	Yes .	Removal of portions of fourth to seventh ribs; closure of wound; primary union; wound reopened after 2 mo.; resection of portion of sixth to ninth ribs; destruction of periosteum; lung c. much smaller.	Prim. incre.; second. decre. of symp., with consid'ble shrinki'g of lung; terti. incr.; consid'ble improvement of symptoms.	Three years after second operation alive; condition no worse than after operation.	
65	Tuffier: Bull. et Mem d. l. Soc. d. Chir. d. Paris, 1900, xxvi. 342.	Female, 30	Pulmonary gangrene; sputum contains tubercle bacilli.	. . . .	. . .	Incision; pneumonotomy; 8 cm of lung resected; drainage.	. . . .	Perfect recovery after six months; fistula persists: no tub. bac.	
66	Ferguson: Med. News, 1900, i, 405.	Male, 27.	Abscess beneath pectoralis major secondary to tuberculosis of lungs and tubercular osteitis.	Good; no signs of cavity.	. . .	Three operations. 1, Opening of abscess; drainage. 2, Resection third and fifth ribs; packing with iodoform gauze 3, Resection of a piece of tuberculous lung; packing with iodoform powder twice a week for month.	No improvement after first two operations; remarkable improvement after the third.	Apparently cured.	
67	Sarfort: Deutsche Med. Woch., 1901, p. 103.	Female, 40	Large cavity in right upper lobe.	Fever; hemoptysis; cachexia; signs of a cavity.	Yes .	Resection of second rib; pleurotomy; pneumonotomy; cavity opened extensively.	Improvement; fever & hemoptysis ceased; cavity contracted.	Death 5 mo after operation, due to an intercurrent pneumonia.	Right apex a thick cicatricial mass; few tubercles scattered through lung; no other cavity; left lower lobe hepatized.
68	Wills: Jour. Am. Med Ass'n, 1901, i, 19.	Male, 45.	Cavity in lower lobe of left lung; consolidation of left apex.	Typical symptoms of 3d stage of disease	Yes . .	Resection sixth rib; pleurotomy; drainage; operation not continued because of man's bad condition. Nine days later spontaneous rupture of cavity into wound.	Gradual improvement	21 months later no cavity; had gained 75 pounds; apparently well.	
69	Wills: Ibid	Male, 30	Cavity in lower lobe of right lung; infiltration of both apices.	As above	Yes . .	Resection of portions of eighth and ninth ribs in front of their angles; pleurotomy; drainage. Six days later pneumonotomy; drainage; irrigation with formalin.	Improvement.	Died 6 months later	
70	Maffert: Quoted by Murphy, Journal A. M. A., 1898, ii.	Male, 19.	Chondro-sterno-costal tuberculosis and tuberculosis of lower lobe of left lung.	Symptoms of purulent pleurisy; no sign of a cavity.	. . .	Resection sixth rib in axillary line; discharge of pus containing bacilli; lavage; drainage.	. . . .	Death 1 month later	Enormous sterno-costal cold abscess, communicating with a cavity opened by a narrow orifice; right lung almost completely destroyed; left studded with tubercles.
71	Porritt: Lancet, 1892, vol. ii, p. 1318.	Male, 65	Cavity right upper lobe . . .	. . . .	. . .	Second and third ribs removed; anterior and posterior.	Improvement.	Death 3 years later.	
72	Porritt; Ibid	Female, 15	Cavity left upper lobe	. . . .	. . .	First, second, third and fourth ribs removed; posteriorly.	. . . .	Death second day	
73	Porritt: Ibid	Male, 47.	Cavity left upper lobe.. . . .	. . . .	Yes. .	Second, third and fourth ribs removed; anterior to axilla.	. . . .	Death pneumonia, within few day.	

director; small amount of pus evacuated, but in spite of completed tracheotomy and the use of Fell O'Dwyer artificial respiration apparatus, dog died.

Postmortem.—Many adhesions beneath the second and fifth ribs, but no area of consolidation and no nodules were found in either lung. The upper lobe of the sutured lung was very friable, and broke down readily under the fingers, a condition that had been discovered before death, probably due to the cutting off the blood supply by the sutures.

EXPERIMENT 11.—March 18. Preliminary exposure of trachea, but tube not opened. Third rib excised. Acute pneumothorax as soon as the pleura was opened, but symptoms not severe. Lung seized with forceps and pulled into the opening; improvement in symptoms; lung anchored to margin of wounds by interrupted silk sutures; lung ligated, and portion removed; stump sutured to chest wall.

EXPERIMENT 12.—April 4. Two injections previously of 2.5 c.c. tubercle bacilli emulsion. Has not lost weight. Excision of one inch third rib. Upper lobe seized as quickly as possible and dragged into the wound through chest wall. Dyspnea was immediately greatly lessened. Artificial respiration other than manual not required. Lung sutured to margin of wound, ligated with silk and cut away. Drainage with gauze. April 24, apparently perfectly healthy and eating and drinking normally. Killed by chloroform. Small narrow sinus presented leading to third rib; strong adhesions at site of suturing, 1 in. in each direction; small area of infiltration ½ in. in diameter adjacent to site of suturing. Consolidated, carnified and sinking in water. Remaining portion of lung had regained its function, was crepitant and floated. Few adhesions in left pleural cavity. Abdominal and other organs healthy.

EXPERIMENT 13.—April 5; ½-grain morphia, hypodermic ether. Preliminary incision over trachea without opening the tube. Subperiosteal excision third rib. On opening pleura, pneumothorax and dyspnea severe, but as soon as lobe of right lung was grasped and dragged forcibly into the wound, improvement occurred. Artificial respiration not required. Lung sutured to chest wall with silk sutures tight, so as to prevent all air from entering pleural cavity; lung ligated and cut off. Incision in throat closed. Wound drained; sterile gauze; plaster of paris. April 24, killed with chloroform. Small sinus leading to silk suture. Right pleural cavity strong adhesions 1 in. from point of suturing; lower and posterior parts of upper lobe normal in color and appearance; crepitating on pressure and floating in water; right lower lobe normal; in the area of excision there was consolidation; was non-crepitant; remainder of upper lobe had evidently regained its function.

EXPERIMENT 14.—Trachea exposed. Third rib excised; acute pneumothorax with dyspnea relieved by dragging lung into the opening and holding it with hemostatic forceps. Trachea incised and artificial respiration kept up with bellows, but death occurred in about a minute and a half after pleura had been opened.

EXPERIMENT 15.—Pneumonectomy; suturing of lung. Small dog. Incision in left side between fifth and sixth ribs; marked collapse when pleural cavity opened; ether then suspended; lower lobe caught with blunt forceps, pulled into the opening and sutured to the wall with chromicized gut. Muscle sutured with silk; dressed with collodion; dyspnea great, but dog walked in ten minutes and the following day had apparently suffered nothing from the wound. Ninth day, superficial stitches gave way and the wound opened; adhesions to the wall seemed firm and strong; incision was made into lung substance one-third inch deep; hemorrhage controlled by packing; drainage. Dog killed at end of 4 weeks; wound entirely healed; had not lost his appetite since second day; firm adhesions to the wall; pleura smooth and healthy; effusion.

EXPERIMENT 16.—After laying bare the intercostal muscles chromicized catgut suture carried with curved needle through the lung and was drawn firmly against the parietal pleura. Tenth day pneumonotomy. Adhesions seemed firm, but by an accident loosened at one side, the pleura became infected, causing the death of the dog in two days. Pleura contained a large amount of fetid pus and the lung had collapsed.

EXPERIMENT 17.—Incision fifth interspace. Endeavor made to produce adhesions of the pleura by Paquelin cautery; failure. Dog killed with chloroform on the following day.

EXPERIMENT 18.—Ether. Opening seventh interspace, lung turned into the wound. Anchored, ligated and cut away. Dog killed 35 days later. Soft parts entirely healed. Lung firmly adherent to thoracic wall at point of suture, otherwise restoration of function good.

SUMMARY OF TABLES.

Pneumonotomy of apex 34; recoveries 20 (of whom 2 died in from 3 months to 3 years later); deaths, 14; operative recoveries 59 per cent. Lower lobes 20; recoveries 15 (of whom 2 died within 15 months); speedy deaths, 5; operative recoveries, 75 per cent. Location of cavity not mentioned, 7; recoveries, 4; deaths, 3; operative recoveries, 57 per cent. Total pneumonotomies 61; recoveries, 39; deaths, speedy, 22; deaths later, 10; operative recoveries 64 per cent.

Pneumonectomies, 6; recoveries, 4; operative recoveries, 67 per cent. (Nos. 10, 11, 40, 48, 52, 66. See tables).

Excision of ribs to produce collapse of chest and lung, 8 operations on 7 cases; recoveries 5 (one died 3 years later); deaths, 3; operative recoveries, 63 per cent. (Although the cases are few, yet the percentage of recoveries is no better than when lung was entered.)

Total operations for tubercular cavities 75, upon 73 cases, with 64 per cent. of operative recoveries. It is impossible to secure the final result in these cases, and even if secured, it would be difficult for faithful comparison to set aside 73 cases of precisely equal severity; moreover, the results that would have been obtained from medical treatment in these 73 cases can be only conjectured. The presumption is that they were of serious type, otherwise they would not have been subjected to operation, consequently the ultimate death rate would have been very high under any form of treatment.

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* This contains references to all the papers of ancient literature, as well as most papers up to 1874.

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(The symposium on surgery of the lung will be continued by the papers of Drs. McCrae and Whitacre and the discussion.)

Original Articles.

CONCERNING THE SYMPTOMATOLOGY AND ETIOLOGY OF CERTAIN TYPES OF UVEITIS.[*]

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In ophthalmic practice three disease manifestations are encountered to which the name "keratitis punctata" has been applied. Two of these are affections of the cornea, the third is not; that is to say, the primary lesion is not corneal. They are as follows: (a) *keratitis superficialis punctata,* in which, in general terms, numerous small punctiform or linear spots appear below Bowman's membrane, the overlying cornea being slightly hazy and the epithelium a little elevated; (b) *keratitis punctata vera* or *syphilitica* of Mauthner, in which circumscribed pinhead-sized, grayish spots appear in the parenchyma of the cornea, and, moreover, in its various layers; the iris is not involved. Constitutional syphilis is the etiologic factor. To distinguish it from the preceding manifestations Fuchs suggests the name "keratitis punctata profunda." (c) *Keratitis punctata,* in which a notable manifestation consists of a precipitate of opaque dots on the posterior elastic lamina of the cornea, generally arranged in a triangular manner, with apex pointing upward, and which from the beginning may be or may not be associated with the signs of iritis.

To this last-named condition the older writers gave the names "aquo-capsulitis" and "hydro-meningitis," because it was believed that it represented a disease depending on an inflammation of a hyaloid membrane, which was supposed to line the anterior and posterior chambers as a serous sac and which was connected with the hyaloid of the vitreous.

With the belief that the disease depended on a specific participation of the membrane of Descemet in its lesions, arose the name "descemetitis," which is still commonly employed.

To those cases in which this punctate deposit on the posterior lamina of the cornea is associated with an iritis, without great tendency to form synechiæ, with a deep anterior chamber and with a disposition to increased intraocular tension, the name "serous iritis" has been and is still commonly given, but, as De Wecker very forcibly objects, the inflammatory product of a serous iritis is not of a serous nature, but is essentially cellular. The iris suffers secondarily from this cellular infiltration which is communicated to all the neighboring parts, the sclerotic, the cornea and the choroid. The points of departure of this cellular inundation are the lymphatic spaces of the eye, and he contends, therefore, that a serous iritis represents a lymphangitis anterior of the eye, having its principal situation in the pericorneal lymph spaces.

Long ago Von Arlt noted that in a certain number of eyes with punctate deposits on the cornea inflammatory changes in the iris are practically absent and the pupil dilates readily. These cases he attributed entirely to cyclitis. The cyclitic origin of the disease has been strongly maintained by E. Treacher Collins, especially after his discovery of the glands of the ciliary body, his belief being that the so-called serous iritis is primarily a catarrhal inflammation of these glands. The secretion of these glands, he maintains, becomes augmented, causing increase in the aqueous humor and deepening of the anterior chamber. The aqueous becomes altered in character, contains leucocytes, pigment cells and fibrin, and these formed elements gravitate and are deposited on the lower portion of the posterior face of the cornea. Therefore, it has been suggested that the disease should be named "serous cyclitis," or "iridocyclitis."

It has, however, been noticed by many that when the characteristic punctate deposits appear upon the posterior surface of the cornea, if the media are sufficiently clear, recent patches of choroiditis can often, perhaps always, be found in some portion of the fundus. Particularly good studies of this association have been made in England, beginning, I think, with Hill Griffith's observations more than fifteen years ago. He believed that the dots on Descemet's membrane were formed in the choroid, set free in the vitreous and carried by the nutrient currents of the eye to be deposited on the back of the cornea. His view necessitated the admission that the suspensory ligament was permeable to solid particles. The choroidal origin of so-called descemetitis, however, is much older than this. For example, Von Graefe himself described in 1856 the association of choroidal lesions with this condition, and we find Schweigger stating that inasmuch as the ligamentum pectinatum sinks into the anterior part of the ciliary body, it may be easily understood how the epithelium upon the membrane of Descemet may become affected by an extension of disease from the choroid without any participation by the iris, and he goes on to describe a case in point, the choroidal disease having been situated in the macular region. I mention these facts because quite recently a good deal has been written on this subject as if the association of this condition with choroidal disease was a new discovery.

It is well known that not only in so-called serous iritis, but in all varieties of iritis, corneal lesions are always demonstrable by careful examination with a suitable corneal loup in the form of infiltrations in the substantia propria, dot-like deposits on Descemet's membrane, and striations in the posterior corneal layers. These have been well described and classified by Dr. H. Friedenwald. There is, however, one fairly constant clinical picture, which is, in a sense, characteristic, to which the names previously recited, all of which are more or less inexact and misleading, have been applied, viz., a deposit of variously-sized and colored dots, arranged usually in a triangular manner on the posterior layer of the cornea; an anterior chamber, sometimes deep and sometimes of ordinary depth; generally, but not constantly, iritis and cyclitis; hyalitis, and practically always some form of choroiditis, the last-named conditions being the primary lesions in most of the cases. In perfect examples there is reason to believe that the entire uveal tract is more or less involved, and hence the name uveitis is appropriate.

In general terms, the causes of uveitis may be diathetic, toxic or infectious. Thus we have causes depending on certain constitutional diseases, for example, rheumatism, gout and diabetes; on specific infectious diseases, for example, influenza, syphilis, gonorrhea, tuberculosis and scrofula, that is, tuberculosis of the lymph glands, and specific fevers; on diseases of the blood, for example, anemia; on anomalies of the urinary secretion, for example, lithemia; on local diseases, for example, of the pelvic region and of the rhinopharynx. In what manner these various ailments and conditions cause iridocyclitis, or, to use the more comprehensive term, uveitis, has not been carefully determined. But it does not seem to be unreasonable to assume that it represents an effort on the part of the uveal tract to expel from its tissues some toxin, bacterial or otherwise, precisely as we know that certain forms of dermatitis originate in an effort of the skin to eliminate a poisonous agent. Such an explanation is not a new one. Sydney Stephenson has maintained that inasmuch as many inflammatory affections of the iris and ciliary body are due to microbic infection, there exist good grounds for believing the proximate cause of all cases of endogenous iridocyclitis to be the excretion by the ciliary body of micro-organisms or their products. This excretory effort need not be limited to the ciliary body, but may include the choroid. A significant fact in this connection is the well-known favorable action of pilocarpin in affections of the ciliary body and choroid. Their excretory efforts are increased under the influence of this drug, and hence its curative power. We may say that the uveal tract sweats exactly as does the skin. Time does not permit me to elaborate these suggestions further, or to go more deeply into the etiology of uveitis. I wish now to present for consideration certain clinical types of this affection with illustrative cases.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

1. RECURRING AND MALIGNANT UVEITIS TERMINATING IN SECONDARY GLAUCOMA AND CATARACT.

The following cases illustrate this type of the affection and indicate that although the termination in each may be similar, the earliest stages, and in some respects the course of the disease, are not identical.

Case 1.—A. H. R., aged 35, male, born in Pennsylvania, married, lawyer, consulted me Jan. 16, 1899.

History.—With the exception of the ordinary illnesses of childhood, the patient has always been healthy. He denies venereal disease of any kind and his habits have always been good. His father is alive and a well-preserved man, having no trouble except cataracts. His mother and one aunt died of phthisis. The patient had attacks of inflammation in his right eye when he was a child and has had enlarged lymph glands. Indeed, it is probable that both eyes suffered from attacks of choroiditis in childhood. About ten years before the date of his visit to my office, he consulted an oculist who writes as follows: "The patient came to me about ten years ago with an attack of choroiditis and vitreous opacities of the right eye. The choroid showed the marks of previous attacks in both eyes. Since that time he has had numerous attacks of fresh choroiditis," but apparently no serious involvement of the iris was present in these attacks, at least none is described. The iris became involved three months prior to this examination, i.e., in November, 1898.

Examination.—The patient is a hearty, healthy-looking man, giving no evidence of any constitutional disease.

Eyes.—V. of R. E., fingers at 50 cm. There was marked iridocyclitis with much thickening of the iris, the pupil being semi-dilated, and intense punctate keratitis. A dim red reflex could be obtained from the fundus when the eye was turned up and in, and large black masses could be detected in the vitreous. When the eye was turned down and out, a large elevation was evident of a purplish or of a somewhat violaceous tint, that is to say, a scleral staphyloma. T. was +1. The field was contracted in the manner shown in the diagram (Fig. 1).

V. of L. E. 6/50. The media were clear, the disc of fairly good color; no serious change in the retinal circulation. The entire macular area was occupied by a large expanse of atrophic retino-choroiditis, with patches of atrophy, pigment-heaping and yellow exudate. Under the usual treatment of sweats, mercury, iodids, galvanism and massage, the right eye gradually quieted, that is to say, the marked irido-cyclitis disappeared, but the lens became entirely cataractous and the punctate keratitis changed to a dense infiltration in the lower portion of the cornea. The left eye has continued unchanged and has never shown any signs of punctate keratitis.

Case 2.—C. L. S., aged 23, female, single, born in Pennsylvania, consulted me first May 20, 1895.

History.—When a child the patient in rapid succession had measles, scarlet fever and smallpox. For a year afterwards her eyes were subject to inflammation. At 12 she had malaria, and at 16 an attack of "redness in the face" which looked like erysipelas. She has suffered much from menstrual disturbance. The family history is good, parents and brothers and sisters being healthy. In February, 1894, the patient was the subject of an illness, which was characterized by chills, intense headache and general fever lasting about a week. It is probable that this was some form of influenza. Soon afterward the vision of the left eye, which, however, had always been a weak eye since it was ulcerated in early childhood, began to fail. Preceding the failure of vision, black spots were much in evidence. Similar failure of vision, but not preceded by any general illness, began in right eye ten months later.

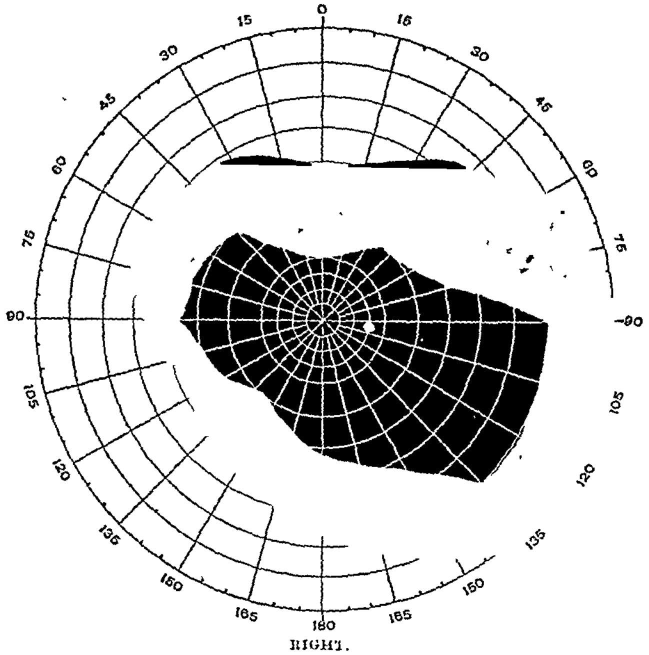

Fig. 1.—Case 1. Visual field, right eye. *Malignant uveitis in stage of secondary glaucoma.*

Examination.—The patient is a moderately tall brunette, with pallid skin. General examination failed to reveal any lesion of the internal organs. A pelvic examination was not made. The urine was normal and the blood examination was as follows: Hemoglobin 65 per cent.; red blood corpuscles 4,310,000; leucocytes 10,400. The differential count of the leucocytes was as follows; Neutrophilic polymorphous leucocytes 83.5 per cent.; oxyphilic polymorphous leucocytes 1 per cent.; mononuclear and transitional leucocytes 5 per cent.; lymphocytes 10.8 per cent.

Eyes.—V. of R. E. 6/30; pupil semi-dilated (under the influence of atropin); pigment spots on the capsule of the lens showing the position of former synechiæ. On the posterior surface of the cornea many large dots of gray-white color, somewhat irregularly placed (Fig. 2). The fundus was dimly seen, owing to some opacity in the vitreous. The disc was oval, much congested, and its margins distinctly veiled; the veins were large and tortuous, the arteries about normal in size and the fundus generally edematous.

V. of L. E. fingers at 2 feet; marked punctate keratitis and some striæ in the lens, but cornea and deeper media too hazy to permit any study of the fundus.

Re-examination.—The patient was not seen after this first examination for nearly a year, when she returned with the statement that her eyes had been worse for the past month. Examination now showed unusually large deposits on the posterior surface of each cornea, which could be well studied on the right side (Fig. 3). These dots were gray-white in color and fully a mm. in diameter, the intervening cornea being slightly hazy. Vision was reduced in the right eye to counting fingers at one foot and in the left eye to shadows; no fundus-view on either side.

Treatment.—Under the most vigorous treatment, consisting of sweats, leeching, iodid of potassium, and inunctions of mercury continuing for a year, the vision finally rose in the right eye, with proper correcting glass, to 6/12 and part of 6/9, and in the left eye to 6/60. The spots on the cornea almost disappeared, although a few very fine ones could always be noted in the more dependent portions. During this year there were several attacks which yielded to increased vigor of treatment, one of them being associated with or preceded by a marked gastralgia which lasted for nearly six weeks.

Again the patient was not seen for a year, when she returned with the statement that the vision last recorded had obtained until four weeks prior to her visit, when it began to fail. It was now in the right eye 4/60 and in the left eye 3/100, and the very large spots which had previously been noted were again manifest. For a few months the patient attended irregularly to treatment and then disappeared for a year. At the end of that time, during which she had had numerous attacks, particularly in the spring and summer, associated with severe la grippe, vision was greatly disturbed, being in the right eye about 1/100 and in the left eye fingers at 50 cm. The irides of both eyes were thickened, completely attached to the capsule of the lens and the pupillary spaces occluded with thick membrane. The spots had consolidated, as it were, into an area of thick infiltration at the bottom of each cornea. T. + 1 and the visual fields indicated that secondary glaucomatous conditions were established (Fig. 4).

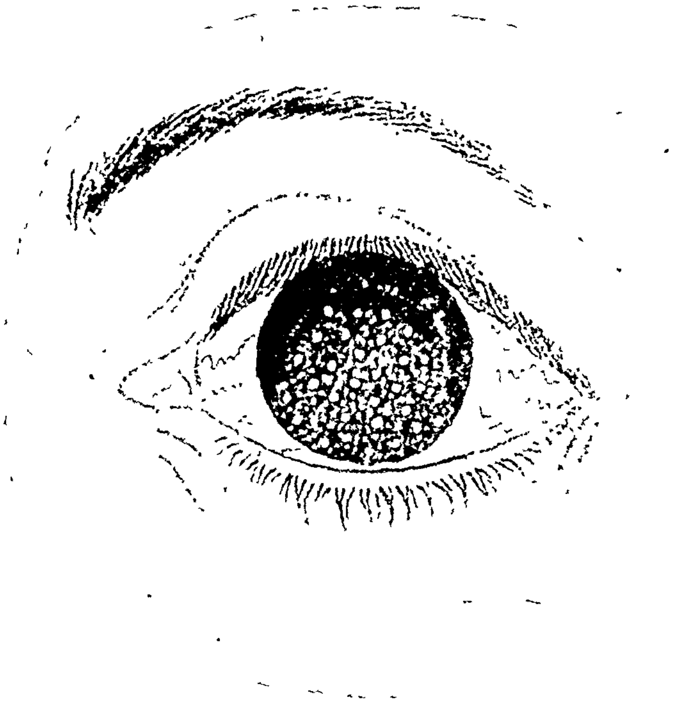

Fig. 2.—Case 2. Malignant uveitis. Early stage. Large dots irregularly placed.

Operation.—No improvement took place under the ordinary treatment, and on April 19, 1899, iridectomy was performed on the right eye, revealing a partially cataractous lens. Vision improved to the ability to see Sn. 60 at 1 meter. Somewhat later, iridectomy was performed on the left eye, but the coloboma almost immediately closed during an attack which shortly followed the operation. Gradually the cataract thickened and became complete about a year after the iridectomy. The patient then drifted into other hands. The cataract was removed, but without materially improving vision. When last examined, in the right eye the coloboma was filled with the remains of cortex and thick lymph, the lower half of the cornea was densely infiltrated; in the left eye, up and out, there was some clear cornea, but elsewhere it was densely infiltrated (Fig. 5).

Case 3.—S. S., aged 20, born in Maryland, single woman, consulted me first April 30, 1898.

History.—There is nothing special in the patient's history, at least in her early history, which throws light on her present condition, and she has not suffered from any severe illness. Both parents are well, two older brothers and sisters and two younger are in good health. One brother, however, has had phthisis. In January, 1898, the right eye became inflamed while the patient was studying at college, which was attributed to hard work and exposure to the bright light from the snow. Gradually the eye got worse, in spite of active and vigorous treatment at the hands of a competent oculist.

Examination.—The patient was a small, slender woman, although with the exception of anemia of the chlorotic type, as evidenced by the blood count, physical examination failed to reveal organic disease. The blood examination was as follows: Color fairly good; coagulation normal; hemoglobin 65 per cent.; red blood corpuscles 4,282,000; leucocytes 11,000; no poikilocytosis. The chest was emphysematous in type, but the respiration was deep and full and the lungs normal in all respects. The cardiac action was rapid and regular and all the sounds clear and distinct, and the cardiac boundaries were normal. The skin of her arms, legs and hands presented an appearance resembling ichthyosis. One brother was similarly affected. The skin is said to be smooth during the summer months.

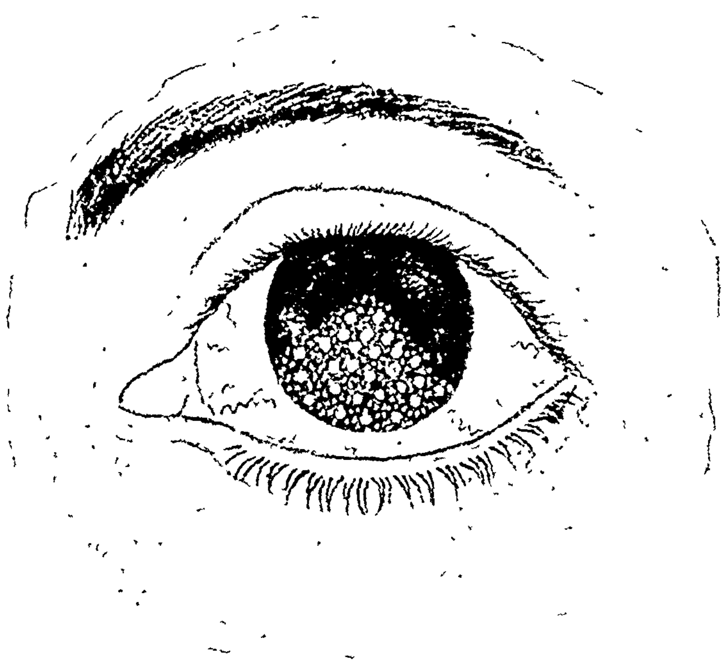

Fig. 3.—Case 3 Early stage of malignant uveitis. Large dots on posterior corneal surface.

Eyes.—V. of R. E. fingers at 50 cm.; slight cyclitis; many dots on the posterior layer of the cornea of large size; the lens opaque and swollen; no view of the fundus; only a red reflex. T. + 1. V. of L. E. 6/5, apparently normal in all respects.

The patient was seen from time to time, without material alteration in the condition of the right eye, on which operation was not permitted. The cataract gradually became complete and vision was reduced to light perception, the dots on the cornea almost disappearing. In November, 1900, although the vision of the left eye was entirely normal, close examination revealed a faint hyalitis and little areas of edematous haze over the fundus, representing spots of serous infiltration in the choroid. The patient was not seen for six months after this, and then, with slight increase in the vitreous haze and the edematous condition of the choroid, the so-called punctate keratitis was evident, the spots not being very large at this time. The patient stated that three months prior to her visit she had had swelling of the right knee which had disappeared.

Examination failed to reveal any lesion in this joint. From this date on to the present time there have been numerous relapses in the left eye with the tendency to form synechiæ, and with each relapse the punctate keratitis has been a little more pronounced and the spots a little greater. The anterior chamber is very deep, but there has been no rise of tension. In addition to the punctate keratitis, the cornea has typically shown the cross-hatched appearance as represented in the diagram (Fig. 6). With the increase in the cross-hatching and punctate condition of the cornea, there has been an increase in the vitreous opacities, which are now dark and floating. The eyeground is difficult to study and shows swollen retinal veins, with fluffy edema of the entire choroid. The visual field is slightly contracted (Fig. 7).

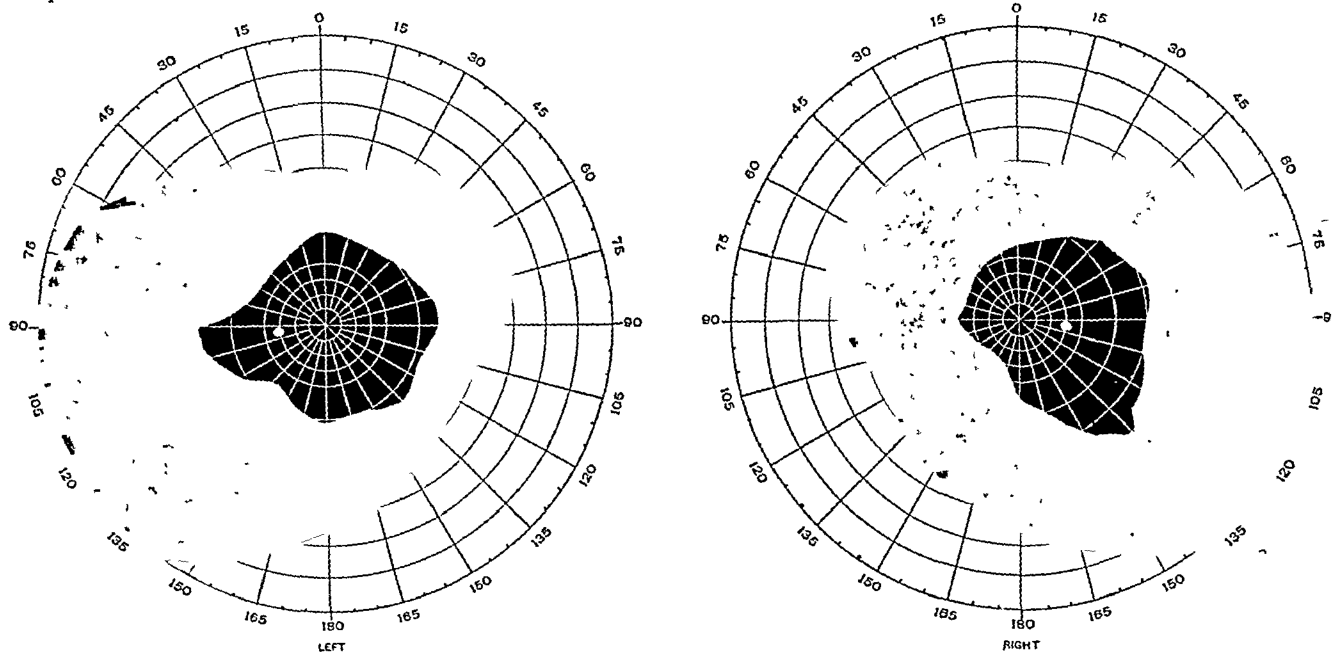

Fig. 4.—Case 2. Visual fields, right and left eye. Malignant uveitis in stage of secondary glaucoma.

The symptoms and, to a certain extent, the lesions which are common to this class of cases are as follows: Some form of choroiditis; extension of the lesions along the choroidal tract until the ciliary body is involved, followed in turn by participation of the iris in the inflammation; frequent relapses, either of the choroidal disease or of the cyclitic disease, or frequently of both; secondary glaucoma owing to obstruction of the filtrating spaces at the angle of the anterior chamber, dependent in part on the outpouring of cellular elements, in part on a change from the serous to a plastic exudate, and in part on the swelling and pressing forward of the crystalline lens, which, as its nutrition is cut off, becomes cataractous. The corneal lesions in these cases seem to have the following characteristics: An unusual size of the deposits on the posterior lamina, which may or may not have a typical triangular arrangement; a tendency for these deposits to become confluent at the lower portion of the cornea and by pressure to invade the cornea itself in the form of an exudate. The size of these deposits reminds one of those which are often seen in the eyes of colored persons, in which descemetitis is apt to be very pronounced. It has seemed to me that uveitis is apt to be more decided in its manifestations in white subjects of the pronounced brunette type.

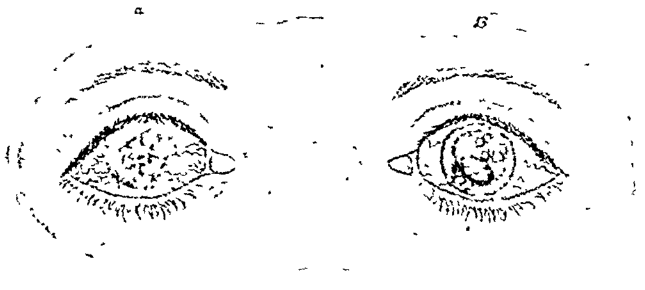

Fig. 5.—Case 2. Malignant uveitis, showing (*b*) large size and coalescence of corneal deposits; (*a*) dense infiltration of the cornea at the end stage of the disease.

In one class of these cases of malignant uveitis the primary choroiditis may exist for a long period, during which it relapses frequently, prior to the involvement of the ciliary body and iris; in another class of cases where the choroidal lesions are much less marked, they are speedily followed by involvement of the ciliary body and iris and improvement and relapse take place in both, but with each recurrence of the cyclitis improvement becomes more difficult and finally impossible because of the disturbance of the nutritive processes in the ciliary body and the stoppage of filtration at the angle of the

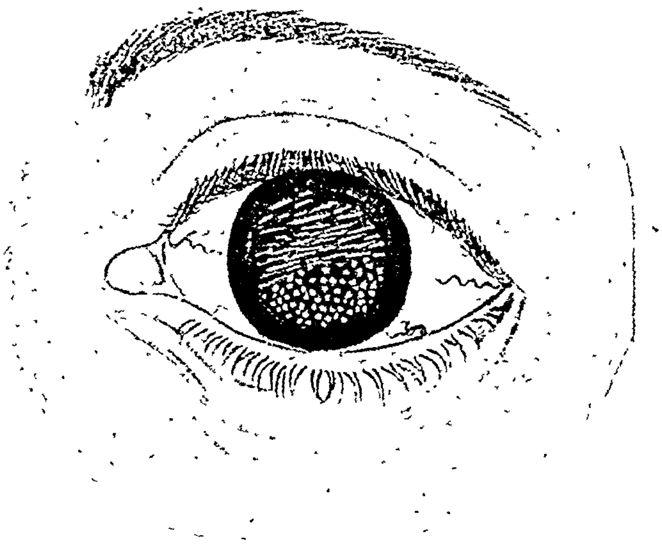

Fig. 6.—Case 3. Uveitis with malignant tendency, showing punctate deposits on cornea and cross-hatching.

anterior chamber; finally, in a third class of cases, the process is a continuous one from the start, choroiditis rapidly becoming associated with cyclitis, to be followed quickly by secondary glaucoma and cataract; in other words, there are no intermissions. This type of the disease may be bilateral and quite as severe on one side as the other, or bilateral, the one eye being blinded by the extension of the inflammatory process, but the other eye saved by a checking of the process in the choroid, or bilateral, the uveitis being malignant from the start on one side and similar in character but less malignant on the other side, that is to say, cataract and secondary glaucoma do not appear.

2. ACUTE UVEITIS BEGINNING AS A SCLEROTICO-CHOROIDITIS, TERMINATING IN MYOPIA AND POSTERIOR POLAR LENTICULAR OPACITY.

This class will serve to explain, I think, some of the cases of myopia which are encountered, particularly when the myopia is very much more pronounced on one side than on the other, the more myopic eye presenting the remains of the storm in the form of vitreous strings and posterior polar opacity.

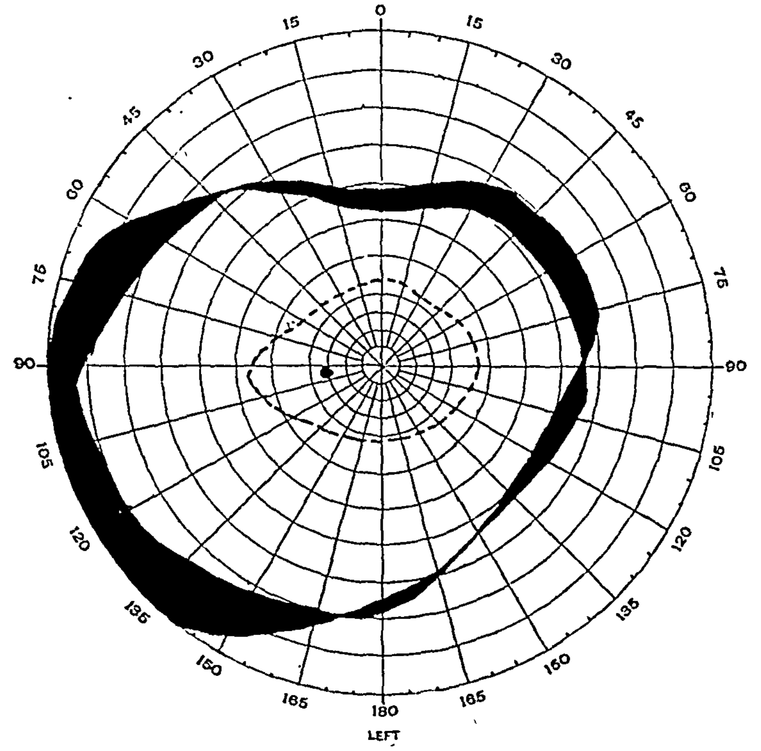

Fig. 7.—Case 3. Visual field, uveitis, with malignant tendency; early stage; slight concentric contraction; general edema of eye-ground.

CASE 4.—J. A. S., aged 22, male, single, born in Pennsylvania, student, consulted me May 2, 1898.

History.—Although never of robust build, the patient has had no serious illness in his life and there is no history of acquired or inherited specific taint. His parents are apparently healthy. During April, 1898, while studying at college, the right eye began to inflame. This inflammation was attributed to hard work and much exposure to artificial light and was unconnected with any illness of a general character.

Examination.—The patient was an under-sized young man of slender build, with pallid complexion and the general type of features which is described under the term scrofulous. Some acne pimples covered the forehead and face and there was a moderate blepharitis of each eye. Physical examination, however, failed to reveal organic disease in any organ. The urine was normal, there was a moderate amount of swelling of the turbinals, most marked on the right side and some tendency to rhinitis, although this did not appear to be of an infectious character.

Eyes.—V. of R. E. 6/50;, typical punctate keratitis and a scleral node of violaceous tint, up and out, about the size of a large pea. The corneal spots were of moderate size and rested on a slightly hazy base. The vitreous was full of dark opacities. The disc was a vertical oval, its edges hazy, the veins full and tortuous, and there was a general edematous haze throughout the entire choroid. The field of vision is illustrated in the accompanying diagram (Fig. 8).

V. of L. E. was normal, the media clear, and there were no changes in the fundus.

Treatment.—The patient was immediately placed upon treatment consisting of mercurial inunctions, ascending doses of iodid of potassium and pilocarpin sweats, and rapidly improved so that at the end of four months the vision of the right eye was 6/15, the scleral node had disappeared and the iridocyclitis had markedly subsided. Then there was a fresh attack with marked exacerbation of the punctate keratitis and increase in the size of the spots on the posterior layer of the cornea. Gradually, under the influence of pilocarpin sweats, iodid and bichlorid of mercury, the cyclitis subsided, the spots became smaller or disappeared, although the vitreous opacities, which were large and dark, continued. Galvanism was then used and subsequently the patient sent to a warm climate.

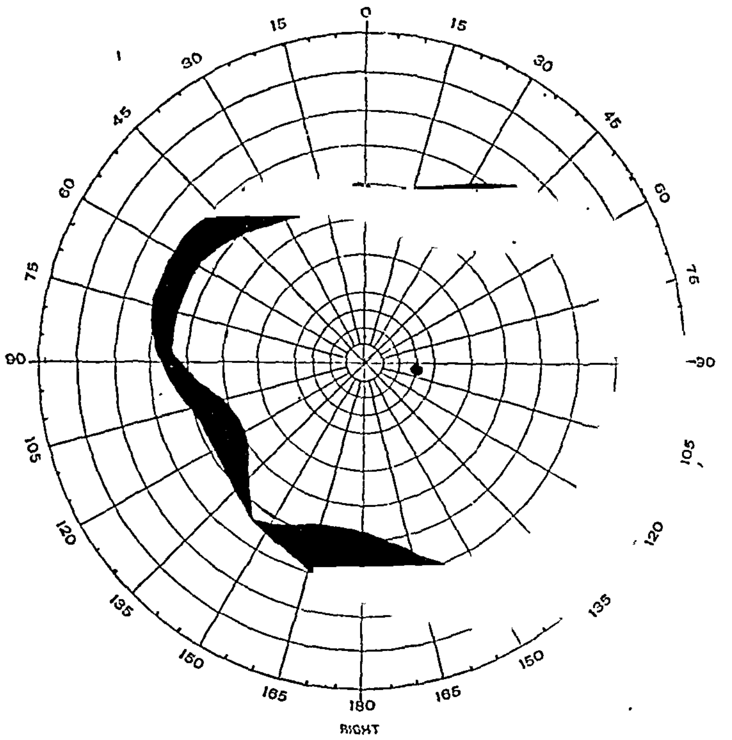

Fig. 8.—Case 4. Visual field, uveitis, beginning as a sclerotico-choroiditis; peripheral contraction; choroiditis also peripheral.

Result.—About a year after the last relapse the media were quite clear, with the exception of some large and stringy vitreous opacities and a suggestive haze around the posterior surface of the lens. The eye had now become myopic and under the fullest mydriasis and in the entire absence of iritis, the neutralizing lens was —5⊂—1 axis 105, 6/15. One year later, with comparatively little change in the refractive error, and with only a few strings in the vitreous, there was a well-marked posterior polar opacity in the crystalline lens, the fundus was clear, the disc a vertical oval, no conus, choroid in fairly good condition. The left eye continued to be normal, and its refraction practically emmetropic.

These cases seem to be characterized in general terms by an area of sclerotico-choroiditis, usually placed well forward, and which is evident in the sclera in the form of a staphylomatous bulging; much hyalitis; comparatively slight involvement of the ciliary body and iris and secondary participation of the cornea, upon which the usual deposits appear in moderate degree. Relapses are not uncommon, but under vigorous treatment the eye quiets with the lesions already described, namely, a certain amount of vitreous change and a posterior polar opacity. Doubtless when the area of sclerotico-choroiditis is far forward the involvement of the ciliary body is quickly manifest through an extension of the process, but the entire choroid is also sufficiently affected to permit a distention of the eyeball and a consequent increase of refraction.

3. MILD, CHRONIC, SENILE UVEITIS, ASSOCIATED WITH ANTECEDENT OR SUBSEQUENT HEMORRHAGES IN THE VITREOUS.

That there exists a mild type of uveitis often seen in elderly subjects, characterized by fluffy areas in the choroid, fine hyalitis, a few spots, almost translucent in appearance, on the posterior surface of the cornea, without involvement apparently either of the ciliary body or of the iris, the pupils remaining perfectly active, is, of course, a very common observation and the symptoms described a familiar picture. The association of retinal hemorrhages, or hemorrhages which burst through the hyaloid into the vitreous is less commonly described and observed.

Case 5.—Mrs. G. R. B., aged 52, born in America, consulted me first on April 8, 1894.

History.—There is nothing noteworthy in the patient's early history. She had the usual illnesses of childhood, but was in all respects a healthy girl and young woman, except that she suffered from headaches. For the relief of these she was given glasses when twenty years old to correct a high hypermetropic astigmatism. She married young, and has given birth to eight children. Six are living and healthy; two died of scarlet fever. There is no history of influenza. She has occasionally had spells of rheumatism, has suffered sometimes from lumbago, and to use her own expression, "is always taking something for indigestion." She has had much worry during her life, largely owing to her husband's inability to cope with his responsibilities and from the fact that he suffered from epilepsy, his attacks, according to his physician, having been brought into control by the use of mercury. Other than this, however, there is no possible hint of specific infection in this patient.

Examination.—The patient is a well-preserved woman, of good figure and physique, and general examination has failed to reveal any organic disease save only the indigestion before referred to and the tendency to attacks of rheumatism, the word rheumatism being used in the vague sense so constantly given to it. The urine examination was negative; blood examination was not made.

Eyes.—V. of R. E. with correcting glass 6/9. Numerous rather fine translucent dots were present on the posterior surface of the cornea, with fine vitreous spots; the disc margins were slightly hazy; the veins were full; the irides prompt in their reaction to light; the anterior chamber deep; and the tension normal.

V. of L. E. with correcting glass 6/9, and an almost exactly similar condition in the cornea and fundus. Somewhat more careful examination a day or two later, after dilatation of the pupil, revealed faint cortical opacities in the periphery of each lens, and between the disc and the macula slight choroidal changes in the form of streaks of erosion. Until the end of the year 1901, or in other words, seven years, the patient was under constant observation, with practically little or no change in the conditions noted. Occasionally the spots on the posterior layer of the cornea would be a little more marked than at other times and the vitreous opacities a little more pronounced. They never entirely cleared away, but also never produced any very serious alteration of vision. Indeed, with full correcting lenses the vision in the right eye was normal and in the left eye 2/3 of normal. Ciliary injection, synechiæ, and inflammatory signs in the iris have never been present.

On the first of January of the present year, after a particularly prolonged season of nursing her sick hu
after reading an unusual amount, dull vision su
peared in the right eye. On examination the vitreous was found entirely filled with large blood-clots.

Treatment and Results.—Under treatment (iodids, mercurials, sweats, etc.), the vitreous entirely cleared, and on the 14th of the past month her vision was 6/9 in that eye and in the opposite eye it was about 6/15. At no time was there any particular change in the visual field, which was normal both peripherally and centrally. After the absorption of the clot, the moderate deposition of dots upon the posterior surface of the cornea was about the same as it had been prior to the hemorrhage, and the only change noted was the very full, dark, somewhat tortuous veins, with signs that they were being pressed on by the arteries.

Case 6.—M. H., aged 48, female, single, born in Pennsylvania, consulted me first Feb. 24, 1902.

History.—There is nothing of consequence in the patient's history except that she is very rheumatic, or perhaps, more accurately, lithemic. This condition also obtains in members of her family. One brother has had numerous attacks of episcleral congestion of undoubted gouty origin, and is deaf, probably due to gouty changes in the ear. The patient herself, *however, has been in fairly good condition,* and except for a high astigmatism, has had fairly good eyes. Through her life, and especially recently, she has had much sorrow and has been greatly worried and mentally depressed. In October, 1901, she began, while reading at sea, to have spots and flashes before her eyes, followed a short time afterward by loss of vision. When examined she was told that she had had a hemorrhage burst into the vitreous.

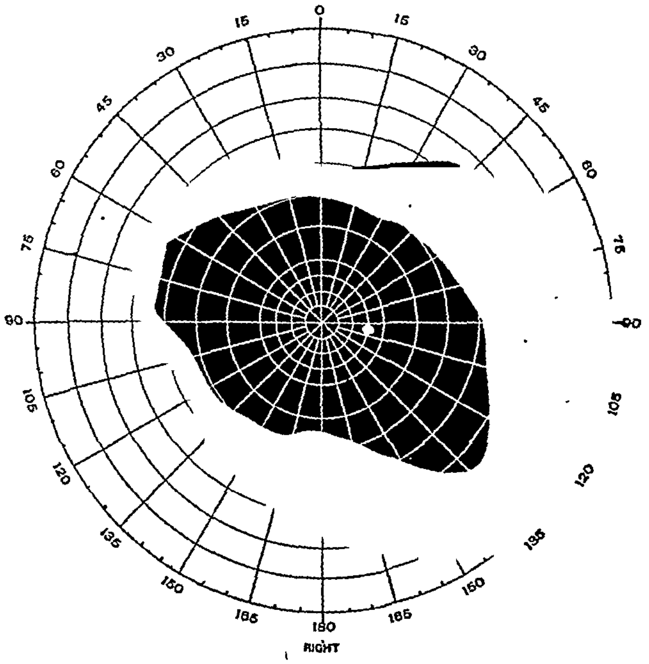

Fig. 9.—Case 6. Visual field, uveitis, following retinal hemorrhage; peripheral contraction; test-object two candles.

Examination.—The patient is a well-formed woman, who gives no external evidence of disease. Examination of the heart and lungs failed to reveal any signs of disease. The blood examination was as follows: Blood fairly good color; coagulation normal; hemoglobin 66 per cent.; red blood corpuscles 3,920,000; leucocytes 7200; no poikilocytosis. The urine examination was as follows: Specific gravity 1018; no albumin; no sugar; urea 1.88 gram per 100 cm.; no casts; no renal epithelium; a few cylindroids.

Eyes.—V. of R. E. fingers doubtfully in the outer field; no fundus view, the entire vitreous being obscured with large dark masses, through the rifts of which a very faint red g
could be obtained. The *pupil* was normal, the anterior ch
ber normal; no rise of tension. Field according to the diag
(Fig. 9).

V. of L. E., after the correction of a simple hypermet
tigmatism, 6/6(?); media clear; round disc of fa
r; physiologic cup; no fundus lesions.

Treatment and Results.—The only indication for treatment apparently was the simple anemia which the blood count showed, and to which the hemorrhage was ascribed. Remedies, however, failed to make any impression, but on April 4 the patient appeared stating that she had had a little pain in the eye. Mild ciliary congestion was evident, with three or four delicate synechiæ and a typical deposition of fine dots upon the posterior layer of the cornea resting upon a hazy surface. The synechiæ readily yielded to the influence of atropin, but the blood clot in the vitreous was unchanged at the last examination.

It would seem that there are two classes of these cases. In one a mild uveitis, the lesions of which are confined almost entirely, or perhaps entirely, to the choroid, exist for years, iris and ciliary body remaining uninvolved although hyalitis is pronounced. Suddenly hemorrhage bursts into the vitreous, coming either from the ciliary or from the choroidal vessels, it is practically impossible to determine which. The effused blood absorbs perfectly under the ordinary regimen and leaves the eye in practically the same condition that it was before the hemorrhage. In another class it would seem that the ordinary hemorrhages which burst into the vitreous precede by a considerable period of time, it may be months, the appearance of the uveitis. Under these circumstances the hemorrhage in the vitreous is much more pronounced, that is to say, it fails to yield to ordinary treatment, and is followed by descemetitis with involvement of the ciliary body and iris. Significant symptoms in the fundus in cases of this character, when the fundus can be studied, are, in the first place, large tortuous veins pressed on by slightly sclerotic arteries, moderate haziness and swelling of the margins of the disc, and particularly fluffy islands of small exudate and edema, often lying far out in the periphery of the eyeground and chiefly situated along the vessels of larger caliber; rarely small capillary hemorrhages in similar situations.

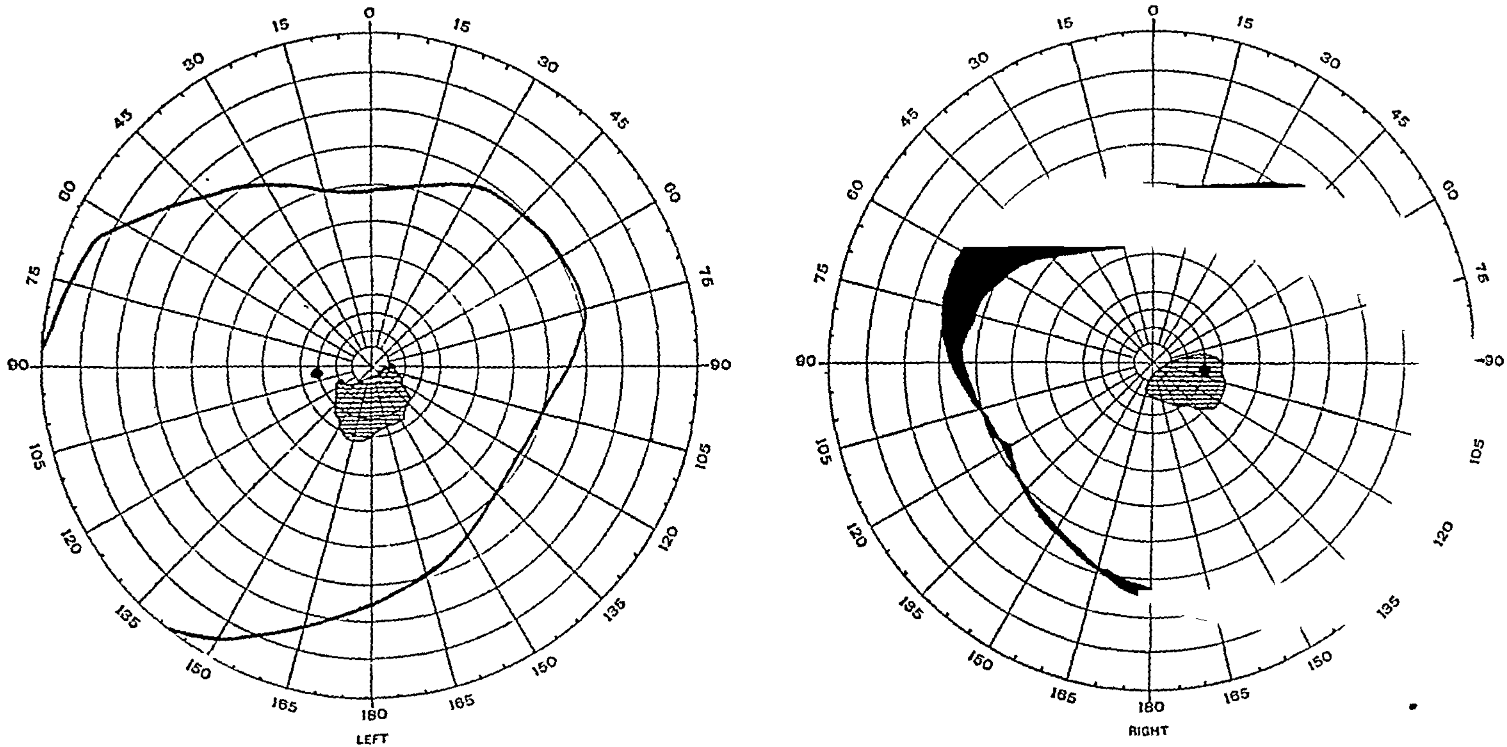

Fig. 10.—Case 7. Visual field, uveitis of gouty origin; negative scotomas in center of fields.

4. RELAPSING PLASTIC UVEITIS BEGINNING INSIDIOUSLY IN GOUTY AND RHEUMATIC SUBJECTS.

The relapsing iritis so commonly ascribed to gout and rheumatism and so frequently encountered, is not exactly the type to which reference is made under the present heading. Certain cases are offered in illustration.

Case 7.—Mrs. H. C. H., aged 55, born in Pennsylvania, consulted me on November 3, 1897.

History.—There is nothing of interest in the patient's early history. She comes from a sturdy line of ancestors, all of whom, however, have—to speak in general terms—been gouty. Her children are healthy and exhibit no signs of disease. She herself has suffered from vague pains, and after middle life was greatly afflicted with pain in the sole of her foot and the arch of her toe, which was attributed to gout. She has been in the habit of leading a rather lazy life so far as physical exertion is concerned, but has been mentally very active. On November 7, 1897, she began to complain of flitting clouds and specks before the right eye, which soon made their appearance before the left eye also.

Examination.—The patient was too stout and moved with some difficulty, owing partly to her disinclination to make physical exertion and partly to the pain which walking occasioned in her feet. Repeated examinations by the most skilful physicians failed to detect the slightest evidence of disease in her heart, general circulation or kidneys. In general terms, however, these examinations did reveal an excess of uric acid.

Eyes.—V. of R. E., after the correction of a slight hypermetropic astigmatism, normal; the disc was oval, of fairly good color, the veins full and irregular, with a slight tendency to beading. There was a faint grayish haze throughout the retina and some superficial choroidal disturbance (epithelial choroiditis).

V. of L. E. normal and exactly similar ophthalmoscopic conditions; media of both eyes clear; pupil reactions normal. Two months later the muscæ had assumed the appearance of clouds, somewhat orange-colored, and an examination of the field of vision revealed perhaps slight concentric contraction and almost symmetrical color scotomas, situated slightly below and more to the temporal than to the nasal side of the fixation point (Fig. 10).

Subsequent History.—The patient was not seen again until Oct. 21, 1898, when she returned with the history that while abroad and on the 2d of April, that is to say, three months after the last examination, she developed iritis. She was treated in France and England and from her English physician I know that when he first saw her the signs were only those of iritis or iridocyclitis, but later on, that is to say, just prior to her return to this country in October, deposits on Descemet's membrane, the so-called punctate keratitis, were easily visible. Peripheral choroiditis, nowever, was not at that time demonstrated. When examined again by me the right eye showed well-marked uveitis, punctate spots on the cornea, hyalitis, fogginess and edema of the choroid, and great distention of the retinal circulation. V. = 6/50. In the left eye V. = 6/5; the remains of synechia below; some faint vitreous haze; a few spots on the posterior surface of the cornea.

From that date until June, 1901, this patient has had numerous attacks and relapses, sometimes in one, sometimes in the other eye, and a few times in both eyes. The attacks always begin with clouds followed soon by slight ciliary congestion, the formation of synechiæ if not prevented with atropin, increase in the hyalitis and marked increase in the punctate deposits on the cornea and the cross-hatching in this membrane. Since the last date noted there has been no attack, the good result apparently being largely due to systematic treatment by baths in the *Hot Springs.* Vision is now normal in each eye, although there are still faint opacities on the posterior surface of each cornea, most marked upon the right side, and a few fine vitreous changes.

Case 8.—Mrs. J. S., aged 47, born in the United States, consulted me Oct. 17, 1901.

History.—There is nothing in the patient's early history which bears directly upon her subsequent ocular disturbance. Her chief illnesses apparently occurred after she was grown up and after her marriage. She has always been typically rheumatic. Some six or seven years ago she had an attack of rheumatism lasting for a long time and treated with large doses of salicylate of sodium. To this drug the patient attributed much of her deafness, which was very pronounced and which had been associated with middle-ear disease and chronic naso-pharyngeal catarrh. She has had several operations on her nose, probably removal of hypertrophied turbinates. She has also had some abdominal operation the nature of which was not definitely ascertained, probably an ovariotomy. One year ago she suffered much from furunculosis, and in the winter of 1900 from severe influenza. The patient's father is dead; her mother is living and healthy; one sister is living, who is also very rheumatic. The patient's eyesight has always been good; indeed, she has prided herself upon her good eyesight until May, 1901, when she suffered from flitting episcleral congestions. These were attributed by her attending physician to eyestrain, co-incident with beginning presbyopia and glasses were ordered. From time to time these ocular congestions recurred, but were unassociated with severe pain until about three or four months later, when violent pain occurred. The eyes, however, were examined at that time by an expert ophthalmologist, and according to the patient's statements, no very good reason for the pain was discovered. From August, 1901, until the middle of October, 1901, the patient seems to have suffered from frequent attacks of ocular congestion, but did not consult any one for her relief.

Examination.—The patient is a good-sized, very blonde woman, with pallid skin and slightly bluish lips. The heart sounds were feeble, but there were no murmurs or signs of organic disease. Examination of the urine was as follows: Specific gravity 1022; albumin none; sugar none; urea 4.5 grains to the fluid ounce; urates not increased; chlorids normal; phosphates greatly diminished; sulphates slightly increased. In the sediment were found many pus cells and much bladder epithelium and mucous shreds; many cylindroids but no true casts. The patient was quite deaf, being able to distinguish only very loudly-spoken words. There was well-marked atrophic rhinitis.

Eyes.—V. of R. E. 6/15; well-marked punctate keratitis, the spots being somewhat irregularly placed and not of very great size; anterior chamber about normal in depth; thick irregular synechia, firmly attaching the edge of the pupil to the iris. The disc was vertically oval in shape. No special changes could be discovered in the fundus; opacities floated in the vitreous.

V. of L. E. 6/22; similar conditions, with the exception of much more marked synechia and plastic exudate binding down the pupillary area.

Treatment and Results.—From the middle of October until the middle of March, the patient suffered numerous relapses, sometimes in one and sometimes in the other eye, lasting from a few hours to five or six days, and always accompanied by the most excruciating pain. All manner of treatment was tried—inunctions, sweats, the iodids, salicylates, leeching, coal-tar products, etc. All of them were unavailing except the salicylates, or some anti-rheumatic remedy. These always controlled the attacks. On a few occasions, when they were very severe, recourse was had to morphia. Always during the attack there was marked increase in the bulbar injection, great increase in the corneal haziness and deposition of the corneal dots, with such great tenderness in the ciliary region that it was difficult to ascertain anything by palpation. Gradually the violence of the attacks subsided, and by the middle of March, although the synechiæ, previously described, which had been so plastic in type that they had been utterly uninfluenced by the mydriatics, remained, the eyes were white and quiet and vision, with suitable correction, was 6/9 in each. The patient was then sent to the *Hot Springs* for a cure, where she remained for two months. Since then there have been fewer recurrences of the attacks, but the pupillary spaces are so much blocked with lymph that iridectomies are urgently required.

The approach of this type of the disease, which I have ventured to denominate insidious, is from two regions. In one class of cases the primary lesion appears in the fundus in the form of an ill-defined choroidal change, or patches of ill-defined choroiditis, while the visual field, but little contracted in its periphery, presents in various portions of its center ill-defined scotomas, and the patient is seriously annoyed by obscurations in the visual field and various types of muscæ, although vitreous change can not be found at this time and direct vision may be normal. Later, it may be months afterwards, the first signs of iritis appear, or more accurately, iridocyclitis, followed sooner or later by the punctate deposits on the cornea, the vitreous changes, etc., the exudate in the pupil space assuming a distinctly plastic nature, so that unless atropin is promptly and speedily used the iris is bound down to the lens capsule by firm synechiæ. Case 7 illustrates this type of the disease very well. In the second class the first symptoms which ought to call attention to the disease appear in the form of flitting conjunctival episcleral congestions, the "hot eye" of Jonathan Hutchinson, the "vasomotor dilatation of the vessels" of Swan M. Burnett, and the "fugacious periodic episcleritis" of Fuchs. That singularly acute observer, Jonathan Hutchinson, long ago stated that this conjunctival, or conjunctivo-scleral condition, might be antecedent to an inflammation of the iris and ciliary body, which, when it comes, may assume the typical relapsing character, associated with corneal lesions and dense vitreous exudates and thick plastic material in the pupil space, which is described in Case 8. Had this patient's condition been recognized when she first applied for treatment, as is described in her case history, months, certainly weeks, before the iritis appeared, her subsequent serious suffering might have been avoided.

Cause of Reddening of Carbolic Acid.—F. T. Gordon (Proceedings Penn. Phar. Asso.) sets forth that recent investigations indicate that the cause of the reddening of carbolic acid is the ozone or hydrogen peroxid of the air acting in the presence of iron, derived from the glass of the bottles or the tin of containers. Like the coloration of resorcin and hydroquinone, this reddening is the effect of the two substances, iron and hydrogen peroxid, acting together; the latter is formed from the slow oxidization of the iron (in bottles or in the substance itself) in the presence of air and moisture. Experiments corroborate this theory.—*Western Druggist.*

ANALYSIS OF THIRTY-SEVEN CASES OF UVEITIS.*

HIRAM WOODS.
BALTIMORE.

The form of uveitis I propose to consider is choroidocyclitis. The cases, with two exceptions, were seen in private practice. They divide themselves naturally into those with and without descemetitis. This was found in twenty of my thirty-seven cases: two of serous iritis and eighteen of choroiditis with descemititis. The closest description I have found in text-books of this form of choroiditis is by A. Hill Griffith in Norris' and Oliver's "System." Under the heading "Anomalous Forms" he describes a "Choroiditis with Descemetitis." He had seen forty or fifty cases, chiefly in young women. His explanation of the descemetitis is: "The dots on Descemet's membrane are formed in the choroid, set free in the vitreous and carried by the nutrient currents of the eye to be deposited on the back of the cornea, which view necessitates the permeability of the suspensory ligament by solid particles."

As to causation, syphilis was never found. Anemia and *tuberculous family history* were sometimes present, and the cases treated accordingly; but in many the cause was undetermined. My own cases confirm this difficulty of fixing a cause. In giving as "causes" associated life epoch or functional defect, I mean only to suggest such inference as can be drawn from association in a number of cases. As descemetitis is the boundary between this and other forms of choroiditis observed, it may be well to state the method of looking for it. This was direct examination, aided by the 20-D. convex lens. Mydriasis, by furnishing an illuminated background, brings the spots into prominence. In a few cases, seen very early, the dots were not found, but appeared by the second or third day. Nor were they transient, lasting two or three weeks. General muddiness of vitreous, in distinction from a fairly clear chamber with large or fine opacities, hyperemic disc and plaque-like white or yellow deposits somewhere in the fundus were uniform. A striking feature was the small number showing retinal hemorrhages or marked implication of retinal vessels. In only three was retinal hemorrhage found. The exudate was choroidal. In two cases, examined several months after the attack, no trace of exudate was found. In such others as afforded late inspection there was atrophy. Subjectively, all presented the same initial symptom: sudden loss of visual acuity, varying from cloudy appearance of objects, with test vision of 20/40 or less, to positive peripheral or central scotoma, or seeing only moving hand. Maximum loss came quickly. Improvement was very gradual and slow, being noted as late as a year after the attack. In twelve of the twenty cases vision normal or as good as 20/30, was ultimately obtained. The paracentral atrophy observed in many of these cases was strikingly inconsistent with such vision. The scotoma was negative, and the eyes functionally satisfactory. Permanent vitreous opacities and central atrophy accounted for visual defect in others.

Omitting for the moment the two cases of serous iritis in girls of 15 and 16, there were eighteen cases of this form of chorioditis, seven male, eleven female. Five male and seven female presented primary, two male and four female relapsing attacks. Of the eighteen cases the site of acute exudate, or atrophy from former attacks, was central or paracentral in ten, peripheral in eight. In *relapsing* cases the second or later exudate adjoined atrophic spots.

Etiology is best studied with sex and age. There was no reason to suspect syphilis in any of the cases. Nor could I get a history implying tuberculosis. Of the five primary male patients, one, age 23, developed a large peripheral exudate a week after trauma—blow from end of a ladder. In two, 22 and 27, no cause was found. The patients were reliable business men, apparently in perfect health. Neither in them or in any of these patients was there tendency to myopia, or other chronic degenerative changes. A fourth, 23, had suffered from chronic constipation for years; but this was the only trouble found. Seven years have passed since this attack, and he has had no relapse, or shown constitutional disease. The fifth, 25, seen in '94, with right central exudate, had a tapeworm at the time, and was of frail build. He was not tuberculous, and has not, I believe, developed it since. In June, 1901, while I was at the St. Paul meeting, this young man had a relapse in same eye, and was attended by my friend, Dr. Randolph. During the past winter he underwent operation for appendicitis. In two remaining male patients, who had relapsing attacks, two and eight years after primary, no cause for latter was found. The ages were 16 and 38. Thus, in these seven male cases in but one was a definitely recognized cause found—trauma. Associated gastro-intestinal disorder was an accompanying condition in two, and nothing was discoverable in the others.

Of the seven primary female cases one, 50, was rheumatic. She presented to a marked degree rapid opalescence of the lens during, and persisting for sometime after the attack. Peripheral striations found in a previous examination for refraction, were not affected. A second case, 39, followed traumatism—blow from a piece of wood, in two weeks. It is noteworthy that failure of accommodation seemed the earliest symptom. When I saw her after two months, there was 20/20 central vision, with peripheral scotoma, corresponding to exudate. A third, 36, was seized with central choroidal exudate while sewing. No cause was found. In a fourth, 37, sympathetic ophthalmia seemed the most likely explanation, though a severe attack of grippe, immediately before the eye trouble, may have had influence. The right eye had been lost eight years previous, after puerperal fever. The globe was shrunken, with opaque cornea, and obliterated anterior chamber. When I saw the patient this atrophied ball was injected, painful to touch, and had been so since the grippe. The left eye had normal central vision; but ciliary injection was present. Pupil was, if anything, hypersensitive. The next day descemetitis appeared, and two days later a faint peripheral choroidal exudate with scotoma in upper and inner field. Recovery after enucleation of right eye was complete in three months. The primary attack in the other seven female patients occurred in the second decade of life. Adding to these the two cases of serous iritis, there are thirteen cases in the female sex, in nine of whom uveitis made its first appearance during the early years of menstrual life, this function being, so far as known, normal in four, abnormal in five. Three of the four relapsing cases were under the care of gynecologists. It is impossible to say whether the pelvic trouble causes the eye lesion or if both are due to some hemic or other influence at present unknown.

To summarize: This form of choroiditis seems to differ from others, 1, in ophthalmoscopic appearances; 2, mode of onset and early symptoms; 3, etiology, so far as we are aware: 4, prognosis. Some of them get entirely well by absorption of exudate, but, especially if atrophy remains, there is great danger of relapse. This may continue indefinitely, but so long as the fovea is spared, useful vision remains. A woman of 42 gave history of six attacks, during each of which she was practically blind; yet, in spite of numerous atrophies she had normal central vision. It is also noteworthy that in but one of the eighteen cases were both eyes involved.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

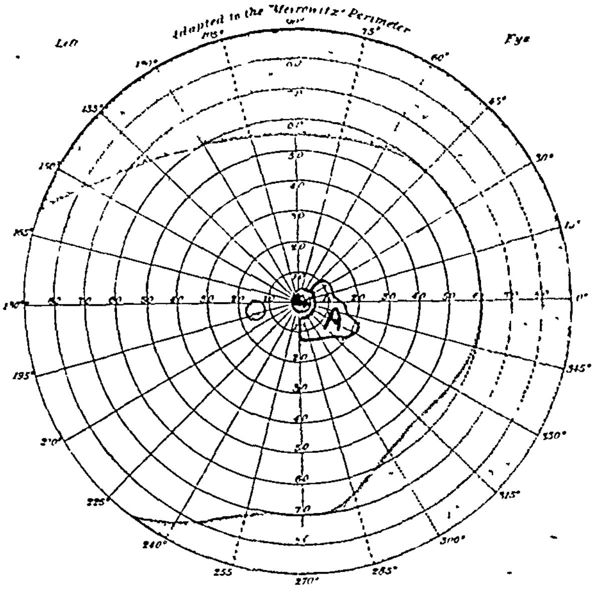

Fig 1.—A Paracentral scotoma corresponding to fundus lesion. Field limits normal.

Of the seventeen cases without descemetitis syphilis was present in three, while a fourth showed typical foveal changes, though neither history nor other evidence pointed to systemic infection. In the three, periods of two, six and nine years had elapsed since the initial lesion; considerably beyond the usual time for secondary eye symptoms. Interesting queries are: how recent should infection be to justify causative relation, and, are the syphilitic foveal lesions sufficiently characteristic of this, in distinction to other forms, to justify diagnosis in absence of history or other manifestations? In these, in two cases of choroiditis disseminata and five with subretinal extravasations, visual impairment was confined to the field area corresponding to fundal lesion. Scotomata existed in eight, macropsia in one, photopsia in two; symptoms characteristic of choroidal disease. Causes, so far as determined, were syphilis in three, unknown in the fourth with specific changes, and gout in both cases of the disseminated variety. Hemorrhages occurred in two old patients who had atrophies, one during convalescence from pneumonia, a fourth in connection with severe asthenopia, the fifth coincident with menstrual suppression.

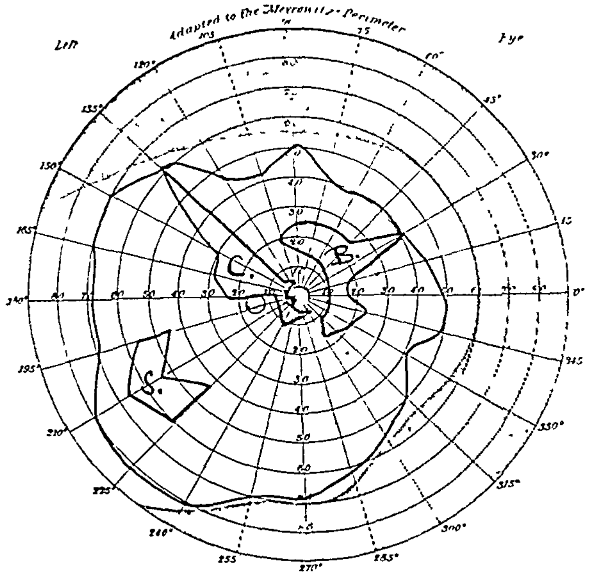

Fig. 2.—B and C Areas of color scotoma and dim white perception S Absolute transient scotoma. Field limits narrowed.

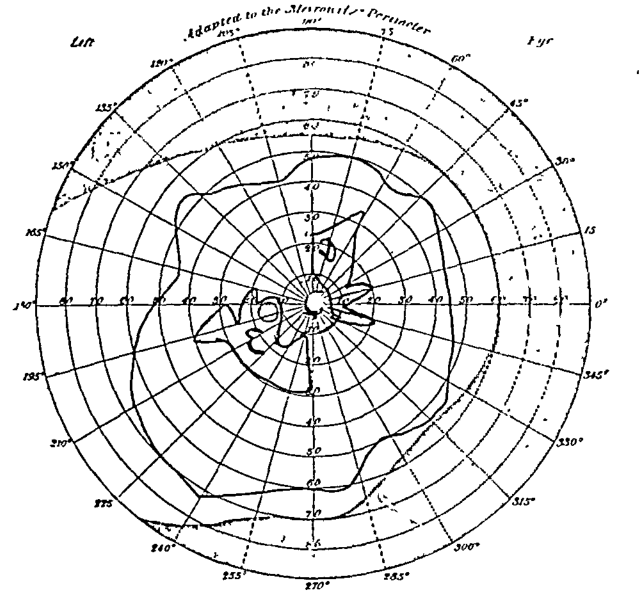

Fig. 3.—E and D. Shape of color scotomata and dim white areas.

I shall use the remaining six patients as a basis for inquiry into the diagnostic and prognostic significance of the symptoms of so-called "choroidal hyperemia," and vitreous opacities. In Griffith's excellent article, already mentioned, the indefiniteness of symptoms of choroidal congestion is dwelt upon, reddened disc being practically the sole sign. This comes through cilio-retinal anastomosis. He says: "Even patches of localized inflammation may not be discoverable till they have broken through the hexagonal pigment layer of the retina." Concerning vitreous opacities, he says: "They are often absent through the entire course of the disease.

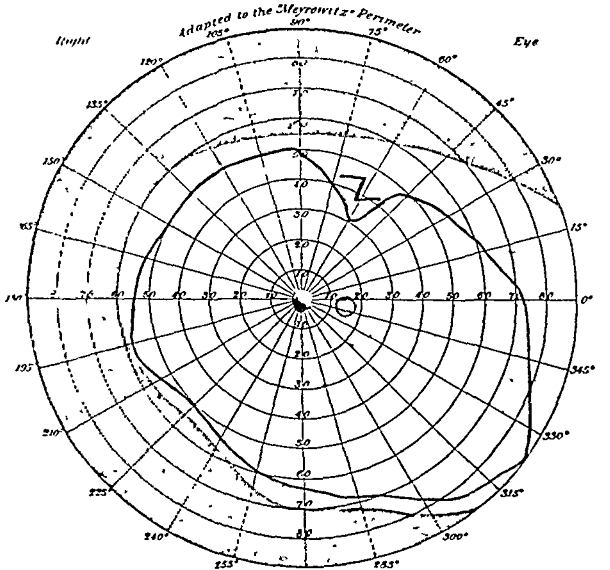

Fig 4.—Narrowing of upper temporal field with decided "cut-in."

Their presence depends on the coincident implication of the retina rather than upon the choroiditis itself, and they are found *only where the retinitis* is more marked than usual, and the inner layers are affected, as shown by opacity of the retina and blurring of its vessels." He regards "the retinitis as a separate process, from the same cause which produces the choroidal trouble, and not as an extension of the latter." I cannot resist the conviction that the statement concerning vitreous *opacities appearing only in connection with* opacity of the retina and blurring of its vessels will not tally with general experience. I am sure I have seen intensely red disc and muscæ without involvement of retinal vessels. I have such a case now under observation: a lady 32 years old, with simple myopic astigmatism, normal central and peripheral vision. Red discs and floating bodies were apparent *on first examination* a year ago. Refraction correction seems to have relieved the choroidal hyperemia, if such was the meaning of the red disc; yet fine vitreous opacities are still observable, and the eyes are not capable of prolonged work. A boy of 19, student at Johns Hopkins University, whom I examined six years ago, had the same intraocular appearances in an eye in which he had a positive scotoma in the upper temporal field. Central vision was unaffected. Symptoms had followed unusual eye work, and recovery came after a few months' rest. I have had under observation for ten years or so a lady in the fifties who has persistently complained of muscæ in the right eye. Central and peripheral vision have been normal. Several times have I noted this reddening of the disc, and fine vitreous opacities when reviewing her glasses. In March she came with a choroido-retinal exudate. Some influence, apparently rheumatic, has kept the eye sensitive and finally produced ophthalmoscopic choroido-retinitis.

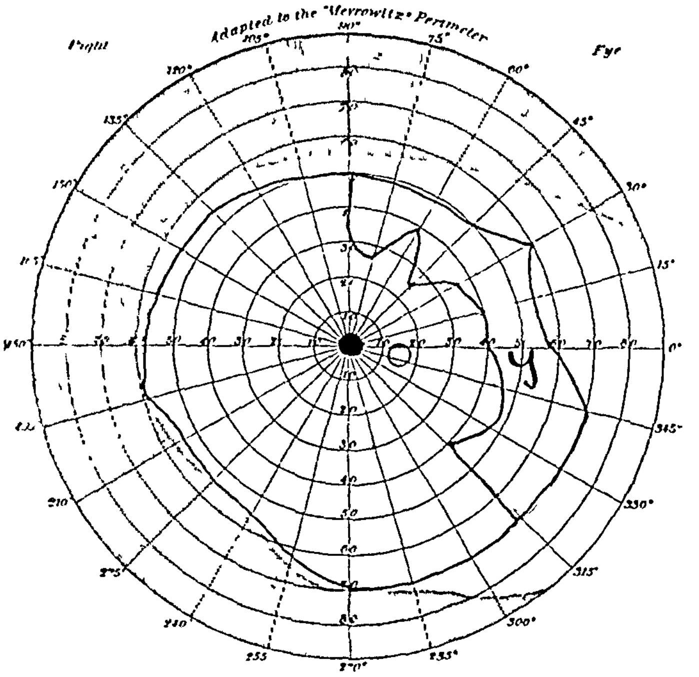

Figure 5

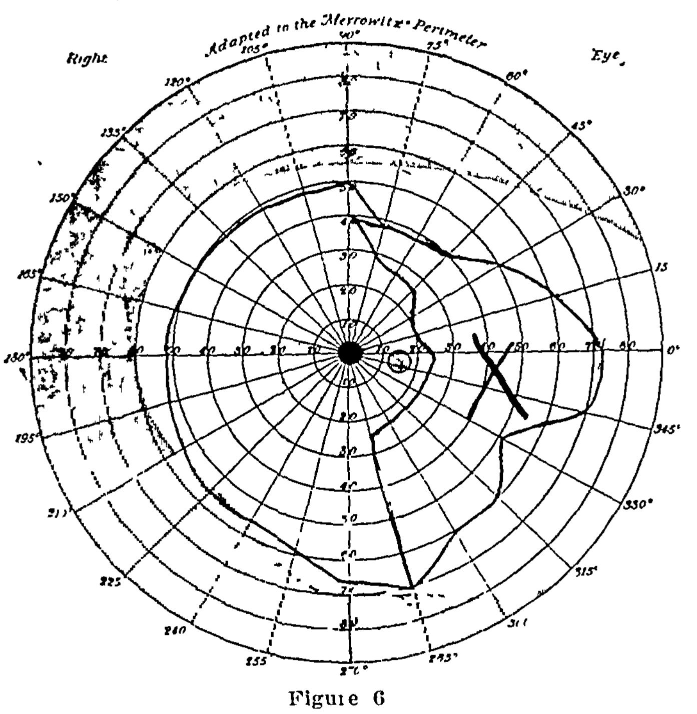

Figure 6

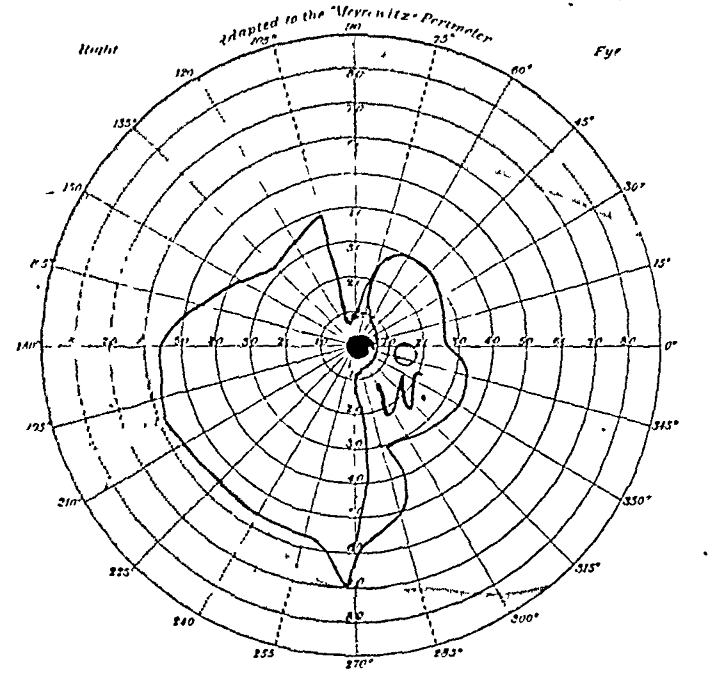

Figure 7.

Figs 5, 6, 7 show progressive narrowing of right temporal field; letters Y, X, W, color scotomata and dim white areas always preceding loss of portion of field

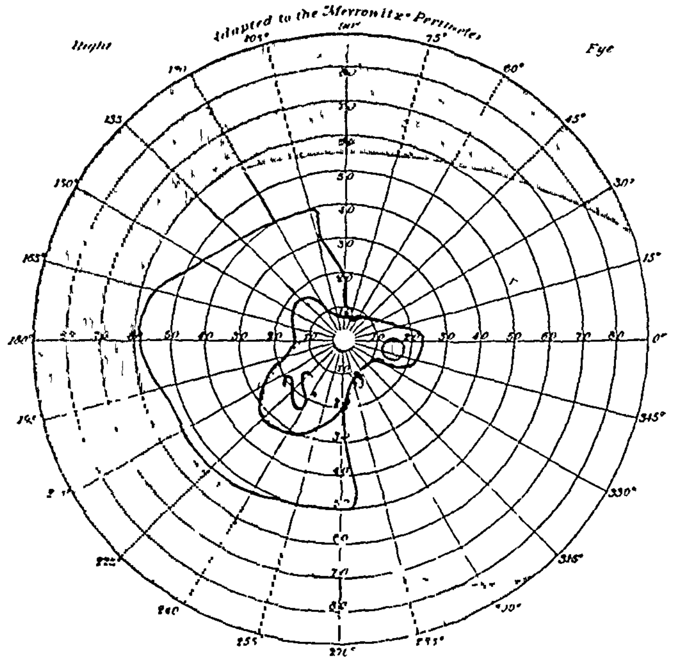

Fig 8 – Only a little temporal field left Nasal field contracting Space V, color scotoma, as in other figures, encroaching well into nasal field

In the following three cases changes followed each other in such rapid succession as to leave no doubt that the red disc and vitreous opacities meant serious trouble. A lady, 31 years of age, was seen in December, 1900, for defective central vision in the left eye. She had consulted another oculist a month previous, who had found choroiditis, and given an unfavorable prognosis. Vision was 20/70, with a paracentral scotoma (Fig. 1). Red disc, floating vitreous opacities and perifoveal pigment heaps were present. In eighteen months fundal appearances have not materially changed. In March, 1902, she thought this eye was getting worse. Examination showed a peripheral positive scotoma and two field areas in which colors were lost and white was dim (Fig. 2). On May 27 the shape of the dim areas had changed, and scotoma disappeared (Fig. 3). In the right eye, which was examined and found normal in December. 1900. visual changes have progressed. In February, 1901. she complained of pain, which yielded to atropia. Vision was 20/15, field normal, but accommodation had fallen off. She needed +2 D. to read 1 Jaeg. I found a few small muscæ in the anterior vitreous, and reddened disc. A month later a small choroido-retinal exudate was found in lower nasal fundus, only after careful search, and field examination had demonstrated narrowing up and out (Fig. 4). From this there have developed in the temporal field dim areas as described above. soon becoming scotomatous and gradually approaching the fovea (Figs. 5, 6 and 7). Central vision was affected only after nine months, when it was 20/30, with complete loss of temporal field. The dim area has now crossed into the nasal field, and central vision is reduced to 20/70 (Fig. 8). Only hyperemic discs, floating bodies in a clear vitreous and insignificant peripheral changes have been found. It seems to me that atrophy of the retinal cells is the only explanation dependent upon a pre-existing choroiditis, possibly, or an independent retinal affection from the same cause which produced the signs of choroidal hyperemia, as held by Griffith. In this case no cause was found. unless it was an offensive post-nasal catarrh. It is possibly worthy of remark that the father of this lady once had what was called "hyalitis," from which he recovered. He himself. a very intelligent man, while understanding the causes of such things, could throw no light on the etiology in his own or his daughter's case.

The two other patients were men. 37 and 40, both in robust health, free, so far as could be determined. from syphilis or tuberculosis, one a farmer, the other a country merchant. Both consulted me for the same symptoms—asthenopia in reading and muscæ. Both eyes were involved in one, the muscaæ being seen only by the left eye in the other. Central and peripheral vision was normal in the first case in both eyes. The discs were red. vitreous, cloudy and contained many opacities, but no fundal exudate or hemorrhage was found. In a few months both eyes had detached retina and secondary cataracts formed later. Removal of these has given ability to walk alone. The other man of 40 presented similar red discs with vitreous opacities. The left eye presented a small peripheral retinal extravasation Central vision was 20/20 R., 20/70 L. E. The right eye has developed only defective accommodation found at first. With emmetropic refraction he needs at 40 +1. for near. The left eye is lost. save in lower periphery of field, by detached retina and vitreous clouds. Here, then, are six cases, all free from syphilis, tuberculosis, central lesion or suspicion of toxic disturbance. All showed the same initial fundal lesion, red disc, the accepted sign of choroidal hyperemia and vitreous opacities. In three there was abnormally low accommodation. One had no lessening of visual acuity. one a scotoma which disappears with rest. a third developed, after years, an exudate. Three patients lost useful sight by retinal atrophy or retinal detachment.

To conclude, the 37 cases indicate: 1. That menstruation, in its establishment, or later, if abnormal, intestinal disorders, acute infections and nasopharyngeal disease should be reckoned among possible causes of plastic choroiditis. Whether or not these conditions are themselves direct causes or lower resisting powers and so enable other causes to act, is uncertain. Nor can it be definitely said that some of these coincident conditions may not themselves be manifestations of recognized causes of uveitis; rheumatism. anemia and the like. 2. These cases of obscure etiology show greater tendency to relapse than forms whose cause is better known. They almost invariably show descemetitis. 3. The fundal changes of so-called "choroidal hyperemia," especially if accompanied by defective accommodation and vitreous opacities, demand guarded prognosis and repeated examination for dim field areas.

842 Park Avenue.

(The symposium on uveitis will be continued by the papers of Drs. Friedenwald, Hansell, Wilder, Woodruff and Marple and the discussion.)

REMARKS ON THE METHODS OF OPERATIONS IN VOGUE FOR CYSTOCELE WITH AND WITHOUT PROLAPSE OF THE UTERUS.*

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MILWAUKEE, WIS.

When I again take the liberty of bringing the subject of operative treatment of cystocele and prolapse of the uterus, already threshed over in many gynecological societies, before this scientific body. it is not my intention to add to the large supply of methods in vogue a new procedure, substantiated perhaps by two or three operations. but to point out a few thoughts which I believe to be altogether timely.

There has been and still seems to be a great difference of opinion in regard to the question whether retroversion or retroversio-flexion of the uterus, so often connected with cystocele, is the antecedent and primary cause of the cystocele and prolapse or whether, as H. W. Freund[1] expresses himself in his article, "Ueber Moderne Prolapse-operationen," "The descent of the anterior vaginal wall is usually primary. as shown by the extended observation of puerperal cases." There is, in my opinion, hardly a doubt that both opinions find their analogies and that four possibilities of origin of prolapse of the anterior vaginal wall and uterus have to be taken into consideration:

First.—The descensus of the anterior vaginal wall is the primary event in the evolution of prolapse. This class is chiefly produced by sub-involution of the anterior vaginal wall during frequent previous births or attenuation during the climacterium, and we may find sometimes a large cystocele while the uterus shows probably elongation of the cervical part but lies in normal anteversio-flexion.

Second.—A retroflexion, or in most of the cases a retroversion is the causative agent of the prolapse and cystocele. I am absolutely of the opinion that in most of all the cases the mechanism of prolapse occurs in this manner.

Third.—In very few cases an excessive hypertrophy of the vaginal portion of the cervix may be the introducing medium of prolapse. This hypertrophy, which is oftentimes the cause of sterility in young women and the cause of prolapse in virgins and nullipari (Beyea[2] collected recently 64 cases of this kind), has nothing to do with the hypertrophied cervix in the prolapsed womb. This latter hypertrophy, which we find in most every case of prolapse of long standing and which is not the cause but the sequel of the prolapse, is nothing but an edema, and disappears almost entirely after reposition of the prolapse and rest in bed.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

Fourth.—Intra-abdominal tumors and ascites may be the cause of prolapse.

Before I go into details of operative procedures I would like to remind you of one fact which is essential, in my opinion, that is, that the bladder is connected with the cervical portion of the uterus by tense, not by loose connective tissue, as the anatomist Pansch stated at one time. This implies that in every case of prolapse of the cervix, that part of the bladder which is in connection with it must prolapse also. The bladder therefore must change its ball-like form and elongation and diverticulum formation must take place. The complete removal of this diverticulum and restoration of the bladder to a complete ball-like organ, as first advocated by Stone,[3] must naturally be one of the principal factors of every cystocele operation. So long as the bladder is not entirely free from the elongated and prolapsed cervix and the descended anterior vaginal wall, and all strings of connective tissue are not entirely removed, a recurrence of the cystocele is most likely to follow. But even when this is fully accomplished and the bladder is pushed up and disappears like a small ball behind the symphysis, a simple anterior colporrhaphy performed after one of the methods in use with or without amputation of the cervix, is not sufficient to withstand frequent abdominal pressure together with overfilling of the bladder. The scar tissue and the anterior vaginal wall which is, as we know, usually attenuated at the climacteric age will stretch and thereby pave the way for recurrence. To avoid this and to give the bladder a more solid support the idea to employ the muscular wall of the uterus as a pelote, as Kreutzmann[4] and others express it, seems advisable, and this method, in a manner described by Duehrssen, has been used by the writer in every case of cystocele with and without prolapse of the uterus, with excellent results. In women near or about the climacterium the entire anterior uterine wall is fixed to the vaginal wall after anterior colporrhaphy or dissection of flaps from the anterior vaginal wall and opening of the plica vesico-uterina. In younger women where such a fixation would cause disturbances during future pregnancies, the plica vesico-uterina is opened by a sagittal incision and the uterus fixed immediately beneath the origin of the tubes to the anterior vaginal wall by one silkworm-gut stitch, followed with isolated closure of the plica vesico-uterina in a manner described by Duehrssen,[5] or after the method of Mackenrodt,[6] Martin,[7] Ruehl: one and one-half to two centimeters over the internal os, by three catgut sutures.

In all cases in which one finds it necessary, and this necessity arises, in my opinion, in four-fifths of all cases, I add a posterior colpoperineorrhaphy with buried catgut sutures in layers, either after Emmet or Howard Kelly's modification, or Hegar Simon or Martin, etc., according to the alterations found on the posterior vaginal wall and perineum.

It is not my intention to point out at this place again the great advantages which a vaginal celiotomy as compared to abdominal laparotomies has in general for the patient; but not always for the operator: advantages which make it advisable to perform everything which can be performed with safety for the patient, by the vaginal route. These advantages which I have pointed out in my monograph[8] (the retroversio-flexio uteri mobilis et fixata), its conservative and operative treatment, are so uniformly recognized, that they are beyond discussion, and Duehrssen, Martin and many others have shown by their statistics what can be achieved by patience and perseverance in this line of work. Duehrssen[9] divides his vaginal anterior celiotomies in two series of cases, in the first one, 500 vaginal anterior celiotomies, most of them with difficult conservative and radical work on the adnexa and uterus, myomectomies, ovariotomies, etc., he had 3 per cent. mortality, and in his second series, under 428 operations, 2 per cent. In all his cases operated on for retroflexion by his method he had but 2 per cent. recurrences.

Fig 1.—Case 2. Total prolapse of uterus before operation.

Furthermore he states[10] that he removed 36 ruptured extra-uterine pregnancies from five weeks up to the third month, by anterior vaginal celiotomy with no death, and advocates this route for every ruptured extra-uterine pregnancy up to the third month. Strassmann cites at the same place eight extra-uterine pregnancies operated on by the vaginal route, and Martin[11] from 12 cases 9 operated by colpotomia anterior without mortality. I think these results equal those gained by abdominal laparotomies without subjecting the patients to the inconveniences of possible sequelæ of abdominal section. Scanzoni, Jr.,[10] has shown by statistics as cited by Strassmann, that in cases of ruptured extra-uterine pregnancy the results gained by vaginal celiotomy excel those obtained by laparotomy to a large extent. These are but a few facts which show the possibilities of achievement of anterior vaginal celiotomy in the hands of expert surgeons. Naturally, if anywhere, experience and skill is needed for surgical work in the limited field of the vagina.

I must apologize for having asked your indulgence for this aberration, but I may be allowed to add a few remarks concerning what one has pointed out as one of the greatest drawbacks of vaginal fixation, I mean disturbances during future pregnancies. It is true that during the development of these methods because of faulty suggestions, *id est*, to fix the fundus of the uterus directly to the vaginal wall without isolated closure of the plica vesico-uterina, thereby causing tense sero-fibrous adhesions, the development of the uterus during the pregnant state was impaired, and even Cesarean sections were necessary to overcome the difficulties during child bearing. Pape[12] has collected 9 Cesarean sections because of vaginal fixation with 4 deaths. Berndt[13] has added one case later; Duehrssen[14] explains himself thus concerning his vaginal suspension method: "I would like to know one case operated by myself after 1895, in which year I introduced vaginal fixation with isolated closure of the plica vesico-uterina, in which disturbance during future pregnancy has occurred. So long as one is unable to do this I take the liberty of calling all these warnings against vaginal fixation because of danger in future pregnancies unreasonable phrases for which one can hardly find any longer the excuse, ignorance of up-to-date literature." Rieck[15] reviews 1,000 cases of anterior vaginal celiotomy and fixation performed in Martin's Hospital in Berlin and Greifswald from 1892 to 1900.

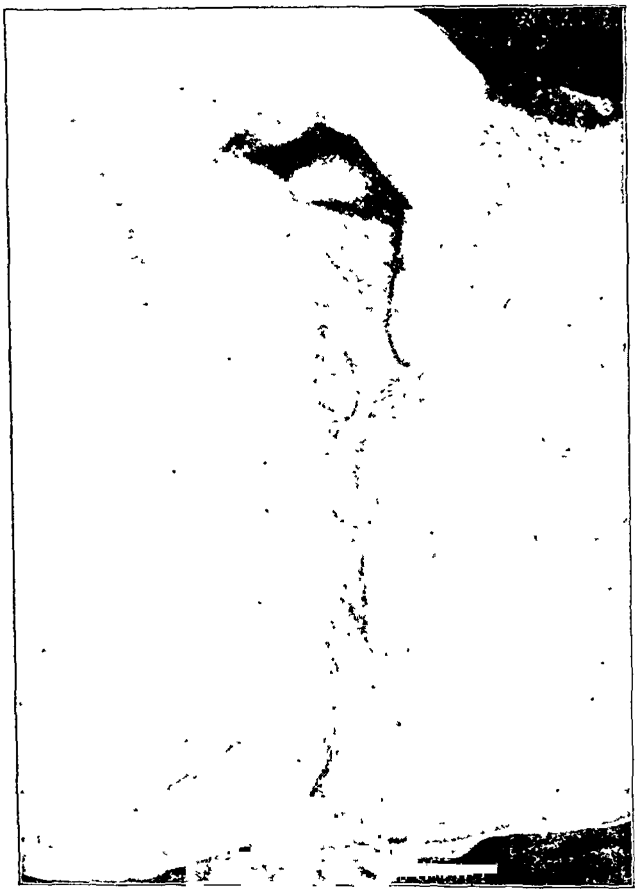

Fig. 2.—Result of operation in Case 2. Taken six months after operation, patient using full force of abdominal pressure.

Up to 1897 Martin fixed the fundus of the uterus to the vagina; of these cases he observed 20 births, in 15 the birth was prolonged but without sequels, in 5 he had to deal with severe disturbances, under these 1 Cesarean section with death. From 1896 to 1900 Martin fixed the uterus not higher than two centimeters over the internal os to the vagina. From this class he observed 10 births without disturbances. Under these 1,000 operations, oftentimes very complicated by adhesions and tumors of the adnexa, he had but 15 deaths; that is, 1.5 per cent.

It is not my intention to state here my experiences and results of vaginal fixation, because the time elapsed since the fixations were performed in Milwaukee is still too short. It suffices to say by the way of anticipation that I have never lost a patient operated on by this method, nor have I heard of a recurrence; two of them are pregnant now.

Returning after this aberration to the prolapse operations, surgeons have in many cases after correcting the malformations in the vagina by amputation of the cervix, anterior colporrhaphy and colpoperineorrhaphy, resorted to abdominal fixations of the womb. A fixation of the uterus will always be necessary, if one resorts to abdominal section, as a suspension, that is, the forming of a ligamentum uteri artificiale suspensorium, will hardly hinder a later descensus of the prolapsed womb, and therewith a recurrence. It must be taken into consideration, however, in performing ventrofixations that, first, the uterus does not usually belong in the abdominal cavity, but in the pelvis; second, that when the adhesions are too tense, disturbances during future pregnancies may ensue just as well as in faulty fixations of the uterus to the vagina (nine cases of Cesarean section because of ventrofixation are cited by Ruehl[16]), and third, that abdominal hernias are apt to occur even if the wound heals by primary intention and is sutured in three separate layers (so-called three Etagennaht). Winter and Olshausen have shown in their statistics that if sutured in separate layers 8 per cent. of hernias follow; in using through-and-through sutures this percentage rises* to 20 per cent. and 30 per cent. Chiefly is this the case when further pregnancies occur, one example of which came to my notice recently. I performed a ventrofixation on a woman after the method of Czerny Leopold four years ago. The wound healed by primary intention, three pregnancies followed afterward without recurrence of the retroflexion, but after the last birth an extensive abdominal hernia developed. A fortnight ago another case came to my notice which was operated on by a surgeon in Milwaukee for prolapse of the womb six months ago. The result is now ventral hernia and recurrence of the prolapse. She has enough of operative procedures and prefers to stay in bed the rest of her life rather than undergo another operation. It is, however, certainly true that in very many cases not the method itself is to blame, but other circumstances and oftentimes, unfortunately, the performer himself. It must be admitted that some surgeons have had excellent results after this method. Noble,[17] for instance, cites 130 cases of procidentia uteri operated on accordingly with excellent results.

Some surgeons expect to overcome the prolapse of the uterus by vaginal total extirpation of the organ itself. In doing this one digs, in my opinion, one's own grave and opens all possibilities for future recurrence. The scar tissue which is left can never be so strong a wall against the descensus of the bladder and the abdominal pressure as the muscular wall of the uterus when used as a pelote and fixed in a proper manner as described above. Only when the total extirpation of the uterus is followed by resection of the greater part of the anterior and posterior vaginal wall or of the total vagina, more satisfactory results have been obtained. Wertheim,[18] Vienna, goes still a step farther than Duehrssen in his method. After anterior vaginal celiotomy he takes the uterus into the vagina and sutures the flaps of the anterior vaginal wall to the posterior wall of the uterus. This method, reserved naturally for cases after the menopause or for cases in which at the same time a resection of the tubes makes further pregnancies impossible, seems rational. Brettauer[19] used this method in three cases with good results. Bucura[20] cites the results of the originator of this method. 16 cases with 1 recurrence. I have, however, never seen a case in which I found it necessary to use this method or to resort to the method of W. H. Freund or Fritsch,[21] that is, taking the uterus into the vagina and suturing it to the anterior and posterior vaginal wall after resection of flaps of both these walls. After this latter operation cohabitation is naturally impossible and an opening has to be made in the fundus for the menstrual flow and mucous secretion. Von Herff[22] cites that all his seven cases operated on after Freund's method were complete failures.

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* *Vide* my monograph, Retroversio-flexio Uteri, etc., page 4, Iowa Medical Journal, 1900.

The method of introducing one or two wires in the submucosa of the vagina, thereby checking the descensus of the womb, or Mueller's method, to close the vagina entirely, thereby sinking the uterus in the depths, are hardly any more warranted, in my opinion, at our time of perfect technic of other more reliable methods. Gersuny's[23] ingenious idea of injecting paraffin into the submucosa in cases of cystocele as a support for the bladder has still to stand the test of time, and Pfannenstiel[24] cites a case of paraffin embolism.

I may be allowed to make a few remarks about the question of cuneiform excision or infra-vaginal amputation of the cervix as an essential part of prolapse operations. Where so-called erosion ulcers are encountered or a hypertrophy of large degree is present, an amputation is advisable, not only because of these reasons, but because every amputation of the cervix has a marked effect on the hypertrophy of the uterus as well. In many cases, however, the so-called collum edema disappears entirely after the correction of the position of the uterus by fixation to the anterior vaginal wall.

The operation as I have performed it up to date is as follows:

First.—Curettement and cuneiform excision of both cervical lips, or infra-vaginal amputation of the cervix if necessary.

Second.—Anterior colporrhaphy in an oval, or better, triangular form, or by the dissecting of two flaps after an ⊥-shaped incision.

Third.—Thorough freeing of the bladder from the cervix, the anterior vaginal wall, the parametria and the plica vesico-uterina, pushing up of the bladder, which now again has the form of a ball, and folding of the organ by layers of purse-string sutures if necessary.

Fourth.—Opening of the plica vesico-uterina by sagittal incision and suturing of the entire uterine wall to the vagina by four or five catgut stitches and two silkworm-gut stitches in a woman near the climacterium or after the menopause. In younger women a silkworm-gut stitch is passed through the vagina, plica and uterus a little beneath the fundus and plica and vagina on the other side (vaginal suspension), which remains there for six weeks. After this the sagittal incision through the plica vesico-uterina is closed separately by a continuous catgut suture (Duehrssen's method). Or the plica is opened in a transverse direction and not higher than from 1.5 to 2 centimeters over the internal os, sutured separately by a catgut suture to the anterior wall of the uterus. The same suture passes on both sides through the vaginal wall. Immediately under this suture two other catgut sutures are passed through the vaginal wall, uterus and vaginal wall on the other side, after Martin's method.

Fifth.—Posterior colpoperineorrhaphy following one of the above methods with buried catgut sutures as advocated first by Werth.*

At the close of my paper I would like to point out that it is not my intention to demonstrate that the method advocated is the method and the only method. There are many phases of prolapse of the uterus and cystocele for which one or the other methods has shown good results in the hands of expert and thorough surgeons, and he is doubtless the best surgeon who knows all methods and selects in the individual case that method which cures the patient.

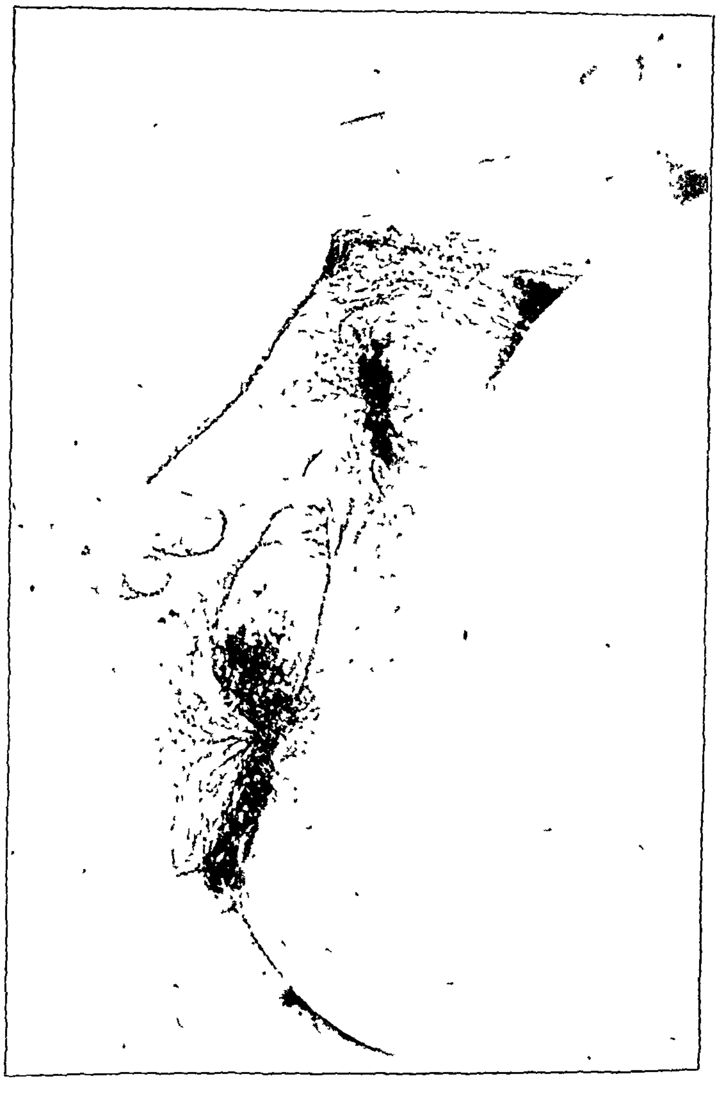

Fig. 3.—Case 3. Total prolapse of the uterus and irreducible umbilical hernia.

I will be amply satisfied if this topic and the method advocated has aroused your interest and seems worthy of your future consideration and trial, because I am fully convinced, after my own experience, of the truthful words of Fritsch.[25] I can assert that, provided the correct technic is used, one is doubtless enabled to cure every prolapse by the vaginal route.

The following three cases of total prolapse of the uterus (I omit the operations for cystocele) on which I had the opportunity of operating in the last two years in Milwaukee after Duehrssen's method, may illustrate my contention.

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* Vide Operative Gynecology, Kelly.

CASE 1.—Mrs. P., 53 years of age, had suffered for ten years from descensus of her bladder and uterus. Since five years ago the entire womb has lain outside of the vagina and after several efforts to get relief from supporters of different kinds she has been for three years unable to perform any house work and was confined to her bed most of the time. Operation after Duehrssen's method two years ago. She left the hospital four weeks after the operation with a perfect result and is enabled to do any required work. No signs of recurrence whatsoever.

CASE 2.—Mrs. H., 67 years of age, was suffering from prolapse of the uterus (Fig. 1) for 12 years and confined to her bed most of the time in the last three years. Operation six months ago; left the hospital four and a half weeks after operation with perfect result and is enabled to fulfill all her household duties. Fig. 2, taken six months after operation, shows the result, the patient being instructed to use the full force of abdominal pressure. A part of the bulbous urethræ, which for good reasons I did not remove, can be seen in the vaginal outlet.

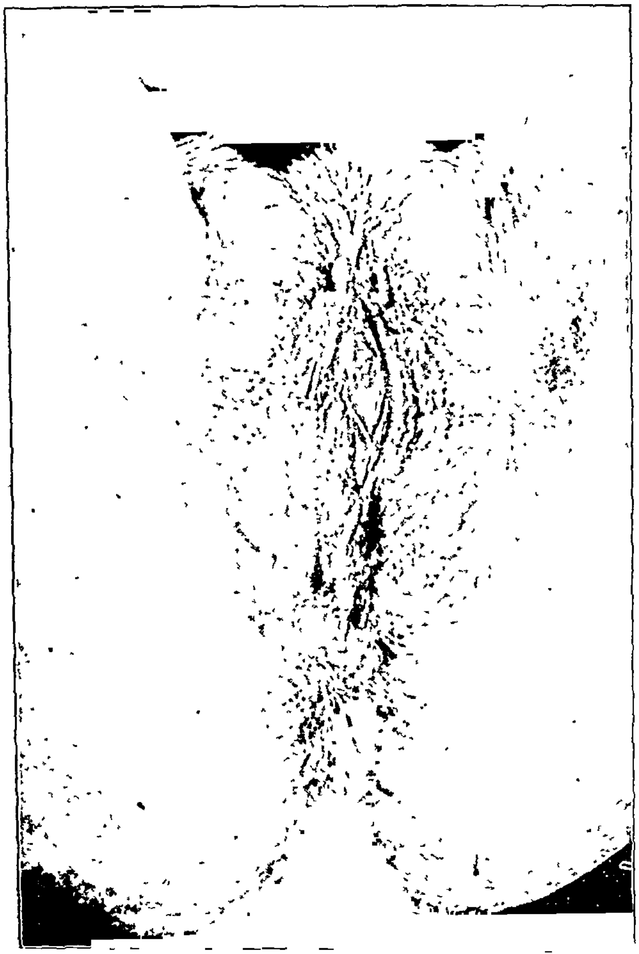

Fig 4.—Result of operation in Case 3. One and one-half months after operation, the patient using full abdominal pressure. The white line on the perineum indicates the scar.

CASE 3.—Mrs. D., 63 years of age, was suffering from an umbilical hernia containing adherent omentum for 23 years and a total prolapse of the womb for 11 years (Fig. 3). Operation three weeks ago. The wounds are healed by primary intention and she will leave the hospital in the coming week. Fig. 4 shows the result.

Case 1 has stood the test of time and the result is ideal. Cases 2 and 3 are perfect up to date, but not enough time has elapsed to form definite conclusions.

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Post-Graduate Hospital.

DISCUSSION.

DR. W. F. METCALF, Detroit—I have had no experience with the fixation of the uterus in the anterior vaginal wall. It seems as though the circulation in the uterus would be disturbed by fixing it thus in unnatural position. The cases that have come under my care I have handled very satisfactorily. If there be great hypertrophy with much scar tissue in the cervix, the woman having reached the menopause, I perform vaginal hysterectomy, sew the ends of the broad ligaments together, perform anterior colporrhaphy, and repair the perineum. Where the pathologic changes in the uterus and adnexa can be corrected I prefer to repair the vaginal outlet as perfectly as possible and do ventro-suspension. As the nutrition of the individual improves the tone of the ligaments is restored and the organ is held in position, with little likelihood of again becoming displaced even when pregnancy supervenes.

DR. H. D. INGRAHAM, Buffalo, N. Y.—This is a very ingenious plan, but I am afraid not a very good one, as it creates an abnormal condition by putting the uterus where it was not intended to be. It seems to me that there is hardly room for it below the bladder. In a woman advanced in years the parts are atrophied, and not much room is left. In my experience prolapse of the uterus is one of the worst conditions we have to deal with. I have tried almost every plan except this one, and in spite of all that I can do, the uterus usually comes down after awhile. One of the worst things to do is a hysterectomy, as it leaves the woman in worse condition than before. We can all put the uterus in good condition for a few months, but in two or three years afterwards the patient's condition is not so good. I used the purse-string suture for cystocele, but found it sometimes made the patient worse. If there is any plan to put the uterus up and keep it there, I shall be glad to know what it is. Repairing the perineum and closing up the vagina as much as possible is good. I did an operation years ago which promised well, that is, putting in two or three silver wire sutures and leaving them, and making the vagina smaller. The uterus could not come down, but after a while gangrene of the uterus occurred, and I had to remove the organ. If I get a suitable case, I am going to try the operation of the essayist.

DR. GEORGE M. BOYD, Philadelphia—I am inclined to agree with the last speaker, because of the fact that I believe that prolapse of the uterus, bladder and rectum should be looked on as a hernia and treated accordingly. Removing the uterus does not cure the hernia. My method is to first determine the size of the uterus. In a certain proportion of cases it seems to be materially enlarged. A great point in the operation is the reduction in weight of the uterus by careful amputation of the cervix. Next perform an anterior colporrhaphy and then repair the perineum. At a second operation I suspend the uterus. My results have been very good. I allow the patient to rest three weeks before doing the second operation. I could hardly countenance doing a hysterectomy without repairing the pelvic floor.

Dr. C. L. Bonifield, Cincinnati—In the remarks made credit has not been given to an American operator to whom it is due. Dr. I. S. Stone, Washington, D. C., originated the idea of lifting the bladder up and attaching it to the uterus at a higher level. He proposed this method in a paper before the Cincinnati Academy of Medicine two or three years ago and he is entitled to priority in the principle involved. Dr. Stone also recommended, although this was not original with him, that after the bladder had been lifted up and attached to the uterus higher than before, that the uterus be fixed to the abdominal wall. This is one of the best operations that can be done for bad degrees of prolapse. I think the operation that Dr. Thienhaus speaks of, turning the uterus in the vagina, and stitching the vaginal wall to the posterior wall of the uterus, should be mentioned only to be condemned. It does not appeal to reason.

I agree with Dr. Boyd in almost everything he said. Prolapse of the uterus and posterior vaginal wall are to be regarded as a kind of hernia. These things are particularly apt to occur after a woman has had several children and her health has been much reduced, and when the subcutaneous fat is being absorbed. This is also true of hernia. I have known men, as well as women, who, when they were run down from any cause, had an inguinal or femoral hernia. When the general health was improved, the hernia disappeared, without operation or truss. With advancing years the hernia reappeared, proving that the general tone of the system has a good deal to do with it. The real cause of prolapse is disproportion between the strength of the supports of the uterus and the weight of this organ itself.

If you weaken the supports, you are bound to have a prolapse, as they can not hold the uterus in place and the first step in a prolapse is retroversion. The cause of weakening the supports is absorption of the subcutaneous fat, relaxation due to frequent pregnancies or poor health. Dr. Goffe said that the uterus was held in position by the ligaments. That probably was true when we went on all fours. If you look at the uterus as an organ to be held in place by ligaments, you can see that these ligaments would answer admirably if we were quadrupeds, but they do not hold the uterus in position now, when we are bipeds. Intra-abdominal pressure is one of the most important factors in holding the uterus in place, and we can not have this unless there is a certain amount of tone to the abdominal wall.

If weakened supports and increased weight of the uterus are the causes of prolapse, the indications for treatment are to diminish the weight of the uterus and increase the strength and, if necessary, add to the number of the supports. The weight of the uterus can be diminished by rest in bed, tampons, curettage and amputation of the cervix. The strength of the supports can be increased by tonics, exercise and massage. Ventrosuspension or fixation gives the uterus an additional support of value. Ventrofixation should not be done in a patient that is liable to become pregnant, but there is not the same objection to doing a ventrosuspension. No matter by what method a woman who has suffered from an extreme degree of prolapse has been cured, she should not permit herself to become pregnant.

Dr. Thienhaus mentioned a European operator that has 8 per cent. of hernias following abdominal section. I should feel very much chagrined if my abdominal sections were followed by that percentage of hernias. The best operators in this country, men who close the abdominal wall with due care and pay especial attention to the after care of patients, secure better results than those quoted.

I agree with Drs. Boyd and Ingraham that the uterus should never be removed in these cases. I have never done it, and never will, but I have had a number of patients come to me where someone else had removed the uterus and the last condition was worse than the first. Dr. Thienhaus pointed out that his operation is not applicable to cases that are liable to become pregnant.

Dr. Edwin Ricketts, Cincinnati—I heard the paper read by Dr. Stone at Cincinnati, and it affords me great pleasure to bear out what Dr. Bonifield has said in regard to it. If you have not already looked up the operation suggested by Dr. Stone, you will find it of great interest to do so. As has been said, these cases should be classified, and in all those cases where abdominal fixation is done, the patient should never be permitted to become pregnant afterwards. In abdominal fixation another thing must be taken into consideration, and that is the condition of the perineum. No matter what you do, your efforts will be futile if you do not repair a lacerated perineum. High amputation is a thing that must be considered in some cases if we wish to obtain the best results. There are things that go hand in hand, and we must always be careful to exercise our best judgment in determining what is best to do for these cases of prolapse.

Dr. Thienhaus, in closing—I have not much to add to what I have already said in my paper, and if I have succeeded in arousing your interest in the subject I shall feel myself well repaid. Dr. Metcalf will find that in many of the cases of prolapse of the uterus, in which a vaginal hysterectomy has been performed, a hernia develops later on. When we have to deal with an umbilical hernia of larger size we split the sheath of the rectus muscle and make use of this muscle in one way or the other. In the same manner we can make use of the muscular wall of the uterus in cases of prolapse and this principle I have advocated in my operation.

SURGICAL TREATMENT OF HEMORRHOIDS.*

WM. F. METCALF, M.D.
DETROIT.

I bring this subject before the Section on Diseases of Women because hemorrhoids so frequently accompany pathologic changes in the uterus and its adnexa. The gynecologist who does not treat the rectum can not get the best results.

From the time of Samuel, when, as is recorded, the men of Ashdod, Gaza, Askelon, Gath and Ekron had emerods in their secret parts, and I know not how long before this period, the treatment of hemorrhoids has been of interest. In those ancient times the priests instructed the Phillistines to prepare five golden images of the emerods which "mar the land," place them in the ark of the Lord and return them as a trespass offering to the Israelites, from whom they had taken it. This they did and were accordingly healed. The same act on the part of the laity prevails to-day, with this difference, the golden images are given to the surgeon, or more often to the quack specialist instead of to the priest. Last year, while visiting southern Mexico, I found some of the inhabitants there carrying a species of native bean in their pockets, believing that so long as they did so they would not be troubled with piles.

We will pass from these faith cures to treatment based upon the thought of their being material entities of only local significance. This thought produced methods of treatment in which the comfort of the patient and the welfare of the organism received little or no consideration, and some of these methods are in use to-day. The thought governing the best treatment lies midway between these extremes.

I believe that to the presence of internal hemorrhoids is due many of those reflex phenomena frequently ascribed to pathologic changes in the organs of generation. Arguments to substantiate this statement are to you, gentlemen, unnecessary, and I will pass them by with a few observations. I have seen tic of the orbicularis palpebrarum muscle of twenty years' standing disappear immediately upon the removal of internal hemorrhoids; long-continued pain in the epigastric region disappears within a week not to return; sciatica cured;

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

intestinal fermentation attended with constipation or diarrhea disappear; improvement in the circulation; a desquamation of the cuticle; improvement in hearing; relief of hyperemia; improvement in digestion and nutrition, and numerous other manifestations which compel my recognition of internal hemorrhoids as a possible cause of numerous systemic disturbances. Any or all of these phenomena are occasionally observed following correction of pathologic changes in the uterus and its adnexa.

External inflamed hemorrhoids which produce local discomfort are productive of less disturbance in distant parts of the body than is caused by internal hemorrhoids of which the patient has no thought.

When possible, operation on the rectum should be done at the same time as operations on the genital organs. A method should, however, be used which leaves less immediate irritation than the system has been subject to from the condition which attempt is made to correct. Thorough dilation of the sphincters should accompany any traumatism within their grasp. The result is to cause dilation of all capillaries and thus to relieve local congestions by equalizing the circulation. This insures better results, both immediate and remote, in operations on other parts.

The thought of prevention of hemorrhoids and of the permanence of cure compels a consideration of their causes. According to David's report in the LXXVIII Psalm, God smote His enemies in the hinder parts because of their high living. Intemperance and worry are still recognized as potent factors in their causation. We may add to the anatomic causes which are recognized as chief, inherited tendency to weak vein walls; undue straining at stool, which, in some cases, is necessitated because of disease of the rectal valves, as pointed out by Dr. Martin of Cleveland; morbid growths or pathologic changes which obstruct the veins of the portal system; any disease in any part of the body which disturbs the equilibrium of the circulation; or any irritation which reflexly disturbs the peristalsis of the intestine or the quality or quantity of the digestive secretion. Thus in the preventive treatment of hemorrhoids the gynecologist plays an important rôle.

The question of contra-indications to operation upon hemorrhoids commands a much less serious consideration when we recognize that practically no danger attends such operations. The life of a patient who has had or is having a condition of more or less definite portal obstruction, may, in many cases, be made more endurable even if we do not, as I believe, vastly improve the prospect for a substantial gain in general condition. And of no class of cases is this more true than of those which come under the eye of the gynecologist.

The method of treatment which I shall endeavor to present for consideration is based upon an experience of more than seven hundred cases operated upon during the last ten years. You are all undoubtedly familiar with the methods advocated by Mathews, Ball, Alling- am and Gant.

Of the method by ligature Matthews says: "Scarcely as there ever been such a consensus of opinion among oted surgeons in regard to the surgical treatment of ny disease as of internal hemorrhoids." All the au- horities to which he refers agreeing that the ligature the "simplest and most radical cure for internal emorrhoids." Ligature *en masse* is meant. In this onnection Mathews says: "It is important to use two zes of thread—a small size for the small tumors and a larger size for the larger tumors." Further he says: "I think a stout linen thread quite as good as silk, but it must be understood that it must be so stout that it will not break with the hardest pulling. Much confusion arises, especially after transfixing a tumor, from having the thread break. It is best, also, to have it well waxed, for the reason that it adds somewhat to its strength, but mainly because it makes the knot more secure." I will not quote further, as you are all familiar with the method. He raises the question as to how much of the pile should be cut off above the ligature, with reference to which he says: "I think the advice usually given by authors is a little too careful, for this reason, if we only clip off a little portion of the tumor we leave the major portions to be pushed back into the bowel, consequently that much more tissue is left to slough." Further, he says: "I am in the habit of cutting off two-thirds." Thus one-third of the tumor above the ligature, we should observe, is replaced to slough. In this connection Ball of Dublin says in substances: "Ligatures, or sloughs following crushing and the use of the cautery, come away about the end of the first week. There remain, however, ulcerated surfaces which require about another week to heal. During this period it is better for the patient to remain in bed because the rectal veins have no valves, which condition may prevent healing."

Does not the surgical principle of avoidance of tissue strangulation apply to this as to other parts of the body? There is a better method. Internal piles are tumors formed by dilated vein extremities embedded in exudate, the result of congestion, and lying wholly or in part above the external sphincter. This exudate in time becomes fibrous. The arterial supply of these tumors is from above, the vessels extending parallel with the gut. The tendency of these arteries when cut is to retract within the loose tissue above the tumor. The vein extremities can be cut without danger of hemorrhage. I am now speaking of uncomplicated internal hemorrhoids, which I believe always arise between the sphincters. In some cases they do extend above the internal sphincter, in dealing with which the danger of hemorrhage is greater and ligation of arteries is occasionally necessary.

Allingham[1] describes his method of excision as follows: "In performing excision I first gently but fully dilate the sphincter muscle and employ a retractor to keep the anus well open. I then seize the pile deeply by the base, cut it off below the level of the vulcellum, and do not let it go till all the bleeding is arrested by torsion of the arteries. Rarely more than two vessels spout and require twisting. I wait for a little while to see that all bleeding has ceased, and then I treat the other piles in the same manner." Mathews says of this method: "I think that those who have done much operating around the rectum will bear me out in saying that in but few hands could this operation be regarded as a safe one, and can never become popular." I do not agree with Dr. Mathew's prediction, and would add to Dr. Allingham's description that in many cases even torsion of the arteries is not required.

In my opinion uncomplicated internal hemorrhoids should be treated in the following manner: The comfort of the patient is dependent on the closest attention to detail. Two or three days before operation a physic should be given. A gentle physic should be given the day preceding operation, a high enema the night before, and an ordinary enema the morning of operation. The patient is fully anesthetized and placed in the dorsal position, the legs being held by a Clover crutch. I prefer the dorsal position because in the majority of cases genito-urinary work is required, and should ordinarily be done before the rectum is touched. I prefer to clip off the hair with the scissors. If parts are shaved great discomfort attends its outgrowing at a certain stage. The most satisfactory speculum that I have found is known as the Pratt bivalve. After adjusting the speculum so that a pile tumor presents between the separated blades, I take hold of the margin of the mucous membrane below the tumor, and with the sharp-pointed scissors curved upon the flap I strip off the membrane covering the vein extremities, which often present the appearance of grapes and should be clipped off with scissors. If there be but a small quantity of fibrous tissue, this is all that is necessary; the tumor will have disappeared. If there be much fibrous tissue, I cut it off smoothly from the surface of the muscle. If a spurting vessel presents I pick it up with a pair of artery forceps and proceed to deal in the same manner with the next tumor. (The largest arteries are found, one anterior and one upon each side near the center.) When I have thus passed around the whole circumference I remove the artery forceps. I then dilate the sphincters gently but thoroughly and examine for bleeding points, which if found are again picked up with fine-pointed artery forceps and ligated with fine catgut, placed through the tissue as a stitch that it may not slip off. The thorough divulsion is a potent factor in the lessening of the venous hemorrhage. This ligation is seldom necessary, as the artery, freed from the fibrous tissue, retracts, and its intima being wounded by the forceps, its lumen is closed. If irritable tags of redundant skin about the margin of the anus have to be removed, leaving a considerable surface denuded, the skin edges should be approximated by suture to lessen the formation of cicatrix. A plug of gauze dusted with antiseptic powder should then be inserted. This plug lessens capillary hemorrhage. It should be removed as soon as the patient complains of pain, but before consciousness is gained. Its removal clears away any small clots which may have formed. Sterile gauze wrung out of water as hot as can be borne is at once pressed firmly against the anus. This is repeated by the nurse every few minutes until the patient is comfortable, when a larger compress should be firmly secured by a T-bandage. This gentle but firm pressure lessens the tendency to spasm.

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[1] Mathews: "Diseases of Rectum," p. 149.

If the patient be a woman morphin is seldom required—in fact, many will never know that the rectum has been operated on when it is done in connection with other operations. In men there is usually a greater tendency to spasm of the sphincter muscles, and an anodyne often has to be given.

It will be seen that this method leaves strips of mucous membrane longitudinal to the gut and attached to the skin margin and to the membrane above. This makes subsequent stricture impossible, and from these strips of membrane new will develop to cover the entire circumference in about a week. Such surface can be more easily kept clean and has greater power to resist infection than has a tissue crushed to the point of sloughing by ligature. After the first day comfort and cleanliness are insured by letting a stream of some antiseptic solution play upon the parts, the patient being placed upon the side upon a rubber pad and instructed to strain down. Water need not be thrown within the sphincters. In fact, I think it better not to pass anything into the rectum until healing is well-nigh complete, unless colic is troublesome, which may and should be relieved by the passage of a sterilized rectal tube. The wounded surfaces usually induce constipation until a stool is forced, which should be done about the fifth day, by which time if there has been no infection the surface is covered with epithelium.

In discussing the question of scar formation, the principles of general surgery should hold here as elsewhere, that the relative approach to asepsis will induce a consequently less marked degree of inflammatory reaction, small-celled infiltration and formation of new connective tissue. The closing in of the epithelial structures from both the columnar above and the squamous below is prompt and is evident microscopically, as I have repeatedly demonstrated in dogs, as well as in a case who died a month after operation. In this case the operation was combined with others and the result could not be traced to any relation with the rectal operation since healing had proceeded as usual by what was practically first intention.

Dr. Henneage Gibbs, pathologist of the Detroit Clinical Laboratory, reports as follows, after examination of the rectal mucus membrane taken from a dog five days after operation: "Result of examinations of sections through the whole affected part in three series by differential staining shows the part from which the mucous membrane was removed to be covered by a layer of squamous epithelium derived from and continuous with the healthy tissue. The new covering is only two cells in thickness, but it has covered the exposed part without the formation of pus, and is, therefore, a healing by first intention."

In comparing the healing process beneath this mucous membrane, with that beneath a new-formed skin the same essential features are observed. The conditions presented when proper precautions are taken before the operation are such that the irritation of the surface is reduced to a minimum. I believe the serum thrown out by the denuded surface the ideal protective after the first slight hemorrhage is checked. Again, the conditions after operation are here much more favorable than in the skin. The underlying muscular structures serve to protect the area denuded and are less subject to inflammatory reaction than the subcutaneous tissue, and when the repair process is under way and the actual contraction of the new-formed connective tissue, which is small in quantity compared with that found in skin, tends to take place, there is instituted a regular and frequent dilatation of the bowel by the passage of its contents.

In certain cases the whole circumference of the rectum is diseased and prolapses. In these cases I think amputation of the redundant membrane advisable. The success of this operation, as much as of any other, depends upon the careful attention to detail. The first step is a thorough dilatation of the sphincters. The diseased membrane is then pulled down around the whole circumference and held with T-forceps, six pairs being required. With one finger upon the external sphincter to guide the point of the scissors, which is entered above the grasp of the forceps, the entire circumference is amputated. The arteries in the membrane above are caught with hemostatic forceps as they are cut. The pile tumors cling to the membrane removed. The external sphincter is now wholly and clearly exposed, and if there be any break in its fibers it can be restored by bringing their ends together with fine catgut suture. We now have the diseased membrane, to the upper edge of which the T-forceps are attached, hanging outside the anus and attached to the skin margin. This separation may be made first, the dissection being carried from below upward. If too much encroachment be made upon the skin a mucous-producing surface will always remain outside the sphincter. If too little is removed the skin margin may be drawn within the grasp of the external sphincter. The membrane which has retracted upward is now pulled down, the longitudinal fibers cut near its margin, and the circular fibers forming the internal sphincter pushed upward, when it is stitched to the margin of the skin. For this I use a continuous suture of catgut passing each time through the loop, as in making buttonholes. The epidermal layer should not be pierced that there may be less tenesmus and discomfort. I usually fortify each quadrant by an independent suture. Aseptic dressing is then applied, and one-quarter grain of morphin is administered. After twenty-four hours the wash should be begun and used two or three times a day, as after the other operation described. It promotes comfort. From one to two weeks subsequent to operation any irritable projections around the anal margin may be smoothed off with the scissors. Two or three times, at intervals of about a month, the sphincters may need to be dilated.

I have found it necessary to do this operation in only about 5 per cent. of the cases operated upon. The result in every case so far as I know has been satisfactory, except in one case, in which there is not as good control of the gas as might be wished. Its cause is probably a break in some of the fibers of the external sphincter at the posterior commissure, which I knew existed at the time, but which I did not think of sufficient importance to repair. In some cases they do not have complete control of the gas for two or three months. I have found this true even in cases where the action of the sphincters appeared normal, and have ascribed it to defective sensation, the gas passing too far down before its presence is recognized.

This is a slight modification of Whitehead's operation, of which the *London Lancet*[1] says: "In the treatment of internal hemorrhoids the authors advocate ligature and tell us that they never employ any other method. Their objection to every one of the clamp methods is on the ground that with the hemorrhoids some healthy mucous membrane must be removed also, while they consider that Whitehead's operation leads to a serious loss of blood, is tardy in healing and is liable to cause ultimate contraction of the lower part of the rectum. All these objections are imaginary and none of these evils result when operations are carefully performed."

Dr. Walter Whitehead[2] of Manchester, in commenting on the above editorial, makes the following, among other statements: "My experience with excision, which now covers a vast number of cases and extends over a period of twenty-five years, has completely convinced me that when the operation is performed as directed and common intelligent principles of general surgery are observed, there is no excessive hemorrhage, and I can absolutely deny that the slightest contraction of the lower bowel ever can or does take place unless some of the skin at the verge of the anus is sacrificed—which would be a distinct violation of the instructions given for the excision. Contraction depends entirely upon the removal of skin, and the contraction bears almost a direct relation to the amount of skin removed."

In my work on the rectum I wish to acknowledge my indebtedness to Drs. Allingham, Mathews, Pratt, Ball, Gross, Quain, Gant and others.

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2. Editorial, Jan. 26, 1902, reviewing "Diseases of the Anus and Rectum," by D. V. Goodsall, F.R.C.S. Eng., and W. Ernest Miles, F.R.C.S. Eng.

3. London Lancet, February 5.

THE CAUSAL RELATION OF BLOOD POVERTY TO GASTRIC ULCER:

WITH REPORT OF AN ILLUSTRATIVE CASE WITH ATYPICAL SYMPTOMS.*

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As there is perhaps no subject the etiology of which has been so thoroughly thrashed over as that of gastric ulcer, and with so little final satisfaction in the way of a definite conclusion, it may not prove uninteresting to consider the condition with reference to a case that presents strong evidence of an actual causal systemic condition. Although traumatic as well as tubercular and syphilitic ulcers, and similar lesions of the stomach, are infrequent phenomena, when they do occur their etiology is clear because of known existing conditions. The characteristic peptic ulcer, or, as it might be well named, the pyloric ulcer, from its frequent occurrence in this position, gives, however, only a hint as to its causation; and the best writers on the subject satisfy themselves with the statement that in all probability a lesion of the mucous membrane has been present, followed by self-digestion of the gastric wall. In studying the etiology of the pyloric ulcer we have at hand the following undisputed facts gathered from clinical and portmortem observation.

The typical peptic ulcer occurs in about 5 per cent. of all hospital cases (Welch, Bramwell, etc.), and in probably a slightly lower percentage of the general population. Statistics are by no means fair means of arriving at such figures, since few cases are autopsied outside the walls of hospitals, and yet without question many of the general population are carrying unrecognized gastric ulcers into their daily life. On the other hand, hospital subjects show a greater tendency to lesions of all kinds than the general population. Statistics are, however, our only guides to an approximate knowledge of the frequency of the condition. The age at which gastric ulcer most frequently occurs seems at the present time to be between the 16th and 30th years, although Brinton, in his classic monograph (1857), stated that of the cases studied by him the greatest number occurred in the second half of adult life and in old age.

It seems also to be agreed generally that the peptic ulcer occurs in a large percentage of all cases at or near the pylorus, on the posterior wall, and near the lesser curvature. (Mayo Robson's recent statement that latent gastric ulcer is usually found at the lesser curvature near the cardia is not borne out by general experience. He states that such a position easily explains the latency of the lesion, since food is taken in the erect posture and is less likely to irritate the eroded gastric wall at this point. We know, however, from the autopsy table that latent ulcers outnumber the open variety two or three to one; and as Robson himself admits that the greatest number of peptic ulcers are lodged near the pylorus it seems difficult to follow his reasoning in arriving at these contradictory conclusions.) We know, also, that its character is that of a funnel, with the smaller opening toward the serosa and the larger in the mucosa itself, while its base is usually clean and its walls punched out and sharply defined; also, that it usually occurs in single formation, though as many as five are frequently found and thirty-four were noted by Berthhold in a case cited by nearly every writer on the subject. Even when multiple these ulcers have usually been found near the pylorus, and often at points in apposition with one another. It is also generally conceded that the female sex is especially involved, and in many instances the lower classes, including seamstresses and housemaids; also, that associated with the ulcer there is usually, if not always, a marked condition of anemia. Finally, the theory seems to meet with general approval that for one reason or another the mucous membrane of the stomach loses its resisting power to the acids of the gastric juice, and that self-digestion takes place. There is a tendency,[1] especially at the present time, to ascribe gastric ulcer, with every other pathologic condition, to microbic infection, but it seems safe to say that as yet this is not the preponderant opinion. In fact, it seems to be the most difficult one to explain.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

Further than the foregoing we may not venture, and the authorities in considering the features of peptic ulcer lead us further only into conjecture. Just what causes tend to a loss of resistance to the acid gastric juice have never been satisfactorily determined. Arterial and venous thrombosis have been suggested, and undoubtedly do occur, but rarely, and still more seldom in the conditions that are associated with gastric ulcer. Embolism has been a favorite experimental theory, but emboli of the gastric mucosa almost invariably occur at the cardia, while peptic ulcer is much less often found at this point. Moreover, thrombi and emboli have only very rarely been found in the postmortem stomach, and are difficult to cause experimentally. Still further, cardiac disease and other conditions of the circulatory system that tend to the formation of emboli do not furnish a sufficient number of gastric ulcers to form more than an incident in the entire number, though gastric disturbance is frequent in these conditions and almost the rule. Mechanical injuries, contact with corrosive substances, compression (as from tight belts and corsets), microbic infection, have all been suggested, and in isolated instances all undoubtedly play their part, but to no such extent as to account for such a percentage morbidity as one-twentieth of all hospital patients.

As early as 1857, however, Brinton remarked of gastric ulcer that "careful clinical study leaves me . . . . little doubt with respect to the remarkable influence of poverty and intemperance." And Gempt, in 1886, wrote that "it is often necessary to remove the ultimate cause, i. e., the anemia or chlorosis before the healing of a gastric ulcer can be accomplished." In order to bring about this result he gave the albuminate of iron, although other authorities at the time condemned the use of iron at this stage on account of its irritant effect. Gempt did not even look on hematemesis as a contraindication to the use of iron. Osler in his text-book says "anemia and chlorosis predispose strongly to gastric ulcer"; Ewald and Leube both suggest a causal connection between anemia, hyperchlorhydria and gastric ulcer; and finally the case reported in this paper lends evidence of the strongest kind to the theory that the necessary condition of lowered resistance to the digestive action of the gastric juice is best furnished by a gastric poverty of blood—including in the term a lack of one or all of its constituent parts.

Mrs. ——, a physician's wife, 25 years of age, was first seen by the writer in May, 1901, at which time she was pale and chlorotic in appearance, but felt well except for a constant wearied feeling of which she spoke as nothing new in her experience at that time of year. Her blood was examined and showed hemoglobin 55-60 per cent (Fleischl), red corpuscles 4,650,000 and leucocytes 8200; no poikilocytosis; no other pathologic blood changes. She had always been pale but no other blood record had ever been obtained. She was then placed upon a course of iron treatment by her husband, which was followed only irregularly. The patient, however, felt well throughout the summer.

Her father is alive and well. Her mother died of carcinoma of the mamma after a very late fertility (48). Two brothers and one sister of the patient have the same pale, anemic appearance, though presumably to themselves and others, perfectly well. The patient was always well and strong during childhood, and had no serious illness until her sixteenth year, when she went through an attack of typhoid fever, complicated with severe cerebrospinal symptoms. She recovered perfectly, but has had since that time a tender spot over one spinous process (the fourth cervical) that has always been sensitive to the touch and to pressure.

The menses began about the sixteenth year and have been regular; they last over a period of five or six days, and considerable blood is lost. This was also the case with her mother, and is now with a sister who is still living and well. There is some functional pain on the first day, but with the appearance of the flow this disappears. No history of edema or headaches, but a slight tendency to occasional bilious attacks, during which she has suffered from headache, constipation, nausea and sometimes vomiting, and then again has felt perfectly well. Often with these bilious attacks there was nosebleed, though the latter has not occurred for more than a year. Never any bleeding from the bowel or stomach. Patient has always craved sour things, and especially during the last year. Appetite always good, bowels regular. Patient has always looked upon her stomach as her strong point.

When the writer was asked to see the patient on Nov. 19, 1901, she had felt well since last examined, six months previously. Three days ago she felt dizzy and nauseated while in the street, and several times since then has been so dizzy as nearly to faint. Yesterday she had an attack of vertigo and again to-day, and was barely able to reach home. There was repeated vomiting of greenish bilious matter. The bowels moved thoroughly yesterday owing to fractional doses of calomel prescribed by her husband. No nourishment has been retained for two days, vomiting taking place within a few minutes after the ingestion of food. To-day she is unable to stand or even look at the light, on account of immediate vertigo, nausea, and vomiting. No blood at any time in the vomitus or stool. No history of pain in any part of the body up to this time, except for some soreness in the epigastrium after vomiting. Menses appeared four days ago, and have disappeared to-day. No difficulty in micturition.

The physical examination showed a rather slender but symmetrically built woman, skin very sallow, conjunctiva and mucous membranes suggest a slight icteroid tinge. No real jaundice. Skin warm, neck normal, no glandular enlargement. Pharynx normal, tongue clean but dry. Temperature normal, pulse 85 and of good character. Arteries soft. Lungs normal with full and equal expansion giving no pain. Cardiac sounds all clear at valve areas. Over the pulmonary region a suggestion of a faint systolic murmur (hemic), not transmitted. Cardiac action regular but rather feeble. Abdomen scaphoid; rather tense condition of recti; and very slight tenderness over the epigastrium. Pain does not seem localized to one point. Liver and spleen normal; no appendiceal tenderness or rigidity.

Blood—Hemoglobin, 70 to 75 per cent.; red blood count, 4,880,000; leucocytes, 4000. No poikilocytosis. No other pathologic changes. Urine—1034, acid, amber, turbid (urates), sediment very abundant, pink, semisolid, albumin faintest trace, sugar none. Full of amorphous urates, many clusters of large uratic crystals. Many long, thin, uratic casts; few hyaline casts. No renal epithelium. Much mucus. Few leucocytes. Feces—Liquid, light yellow, no blood noted. No parasitic segments. Vomitus—Small quantity, pale, green color, odor natural. Not tested chemically. Patient was given a capsule of bismuth, cocain and small (gr. 1/24) doses of calomel.

Nov. 20, 1901, next day. Marked change for the better. This morning is able to retain liquid food with relish. Dizzy only when on feet. Skin seems much clearer and whole expression brighter. Tongue clean. No vomiting since noon yesterday. Abdominal walls more relaxed and abdominal tenderness nearly gone. At this time the attack was looked upon as one of vertigo and gastric distress in chlorosis, and rest in bed was ordered with iron and strychnia, and careful overfeeding with milk, according to tolerance.

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[1] Böttcher, and more recently, Box, Brit. Med. Jour., Feb. 8, 1902, et al.

November 23, three days later, patient is better in most respects, but now complains of a burning pain excited almost at once upon the ingestion of food, and localized over a small area just below the ensiform cartilage. This pain is transferred acutely and constantly to the fifth, sixth and seventh dorsal vertebræ. Bowels opened with an enema yesterday and passages contained no blood. No further vomiting to-day and no headache. On examining the abdomen a slight tendency to rigidity was met with over the epigastrium, but no distention. Just below and slightly under the ensiform cartilage there is a distinctly circumscribed and very tender area, not larger, if as large as a silver dollar. No tenderness at any other point over the abdomen. Appendix negative. Marked pain on pressure over the fifth, sixth and seventh dorsal vertebræ, transferred to and from the epigastric area of tenderness. Gastric ulcer was suspected at this time, though the diagnosis was not believed to be fully warranted.

November 24. Patient this morning seems bright and well, all dizziness being gone. Dressed herself and bathed superficially. Slight quantities of food tasted good, but invariably started the same burning pain over the same circumscribed area. Distinct spot of tenderness present over the fourth dorsal spinous process, and pain is referred to this from the epigastrium. Is sometimes burning, sometimes dull and heavy, and not constant. Tongue quite clean. Epigastric pain on gentle palpation is much aggravated. No tenderness in surrounding parts. Pain last night came one-half hour after eating. This morning is more like a dull weight, after the test breakfast. No nausea or vomiting. Test meal of one roll and glass of water. One hour and a half later 8 c.c. of pale gray fluid were withdrawn. No blood evident macroscopically, fresh or clotted. No lactic acid. HCl markedly increased (0.65 per cent.). Microscopically: full of starch granules, considerable number of red blood corpuscles, few leucocytes, few long thread-like bacilli, no sarcinæ. Urine (a. m): 1013, acid, straw color, clear, sediment abundant, white, flocculent; albumin faint trace; sugar none; chlorids slightly diminished. Many squamous epithelial cells, few leucocytes, no casts, no crystals, considerable mucous; p. m., 1030, acid, amber, clear, sediment scanty, white, flocculent; albumin none, sugar none; urea 2.5 gm. per 100 c.c.; chlorids markedly diminished; few small hyaline casts, much mucus, no renal epithelium, many leucocytes, no crystals.

Nov. 25, 1901. Seen in consultation with Drs. Frederick A. Packard and A. D. Smith. Same symptoms as at time of last note. Pain in epigastrium about the same, sometimes burning, sometimes dull, but nearly constant, localized over the pyloric region, and in the same circumscribed area. Pain still referred to the dorsal spine. Diagnosis of gastric ulcer concurred in by consultants.

A further description of the case may be omitted except to state that the treatment consisted of rectal nutrient enemata of peptonized milk, predigested beef, and egg albumin, all mouth feeding being discontinued. Absolute rest in bed was insisted upon, and a pill of nitrate of silver and opium (gr. 1/12) given q. i. d. On the following day the patient showed positive signs of opium poisoning, and belladonna was substituted in the pill for the former drug. The pain and burning were controlled by carbonated water and at times by a little champagne, though both continued to some degree until the localized tenderness disappeared on the 30th, when for the first time palpation elicited no pain. Beef juice and peptonized milk were then gradually fed by the mouth, the rectal enemata being dropped one by one until at the end of another week the feeding was entirely *per os.* The patient at this time was much emaciated, but there was at once a rapid and steady gain. Gradual overfeeding with milk and eggs and whisky was cautiously attempted and for two weeks the patient ingested from two to three quarts of milk and from six to eight raw eggs daily. She sat in a chair, December 16, for the first time, one month from the time she was placed in bed. The gain in condition continued on iron, strychnia and a careful, overful diet until January 4, when she went out for a short drive. On January 22 she sailed for Europe seemingly perfectly well, and free from subjective and objective symptoms.

The blood picture in May, 1901, when first seen (six months before attack) was hemoglobin, 55 to 60 per cent.; red blood count, 4,650,000; leucocytes, 8200. On Nov. 19, 1901 (third day of attack), hemoglobin, 70 to 75 per cent.; reds, 4,880,000; leucocytes, 4000. Dec. 8, 1901, hemoglobin, 73 per cent.; reds, 4,216,000; leucocytes, 6100. Jan. 18, 1902, hemoglobin, 82 per cent.; reds, 4,360,000; leucocytes, 5200 (sailed for Europe next day). At this time the patient's appearance was better than at any time before or since her illness, and in all probability her blood condition was better than at any previous time in her existence. She was in Europe and Asia, sightseeing moderately, for three months, and returned in what seemed to be first-class condition on April 15, 1902.

On May 6 last her blood was examined, and after several confirmatory repetitions of the hemoglobin estimation, it was recorded as follows: Hemoglobin, 70 to 72 per cent.; reds, 5,056,000; leucocytes, 4000. The pulse was good. There were no subjective or objective symptoms. Patient felt a little tired after the work of rearranging her house for occupation. She was immediately placed on a diet of pure beef juice, squeezed from the beef after a few hours mild heating (not cooking) in addition to her ordinary food. On May 22, sixteen days later, and the day following the cessation of her usual long menstrual period, the blood picture was: hemoglobin, 82 per cent.; reds, 4,500,000; leucocytes, 4800. On June 4 the hemoglobin reading was 87 to 88 per cent., the highest point that had been reached at any time.

The above history has been cited somewhat in detail because it appears to illustrate an occurrence which, to my mind, can not have been an infrequent one in the history of gastric ulcer, and one in which the anemia was known to have preceded by months and probably years what was either a sudden ulcer formation at or near the pylorus, or the sudden exacerbation of a chronic ulcer that had previously given no symptoms. It does not seem possible that the diagnosis could have been a mistaken one, as the symptom complex was recognized at the time as incomplete and rather atypical. There was present, however, on the third day and thereafter, a very typical burning pain in a sharply circumscribed and very tender area, excited almost at once by the ingestion of food, and transferred in a characteristic way to the dorsal spine. The abdomen was scaphoid and the recti rigid, especially over the epigastrium. There was also a marked chlorotic blood picture, a marked gastric hyperacidity, the presence of red corpuscles in the gastric contents and a diminution of the chlorids of the urine, all of which, with the age of the patient, made only one diagnosis probable. The absence of hematemesis is seen in nearly 50 per cent. of all cases, and Boas has recently reported ten cases of gastric ulcer in which there had been no hematemesis, and in the gastric contents of which blood had never been seen with the eye, but was recognized as an "occult" hemorrhage, by means of the chemical tests. The blood, he states, in some of these cases (four out of ten) was repeatedly but not constantly found.

Granting, then, that the case was one of gastric and pyloric peptic ulcer, with atypical, or rather aclassical symptoms (for I do not believe that in this case the two words are synonymous), we are driven to the choice of character of the ulceration between 1, a small symptonless lesion of long standing, suddenly induced in deeper and wider growth; 2, an embolus, or thrombosis, and a consequent ulceration of the infarcted area; 3, a hemorrhagic erosion due to the rupture of some small capillary in the mucous membrane, and 4, an acute peptic ulcer, caused by localized digestion of a gastric mucous membrane, whose powers of resistance to the gastric juice had become so depleted by long standing local and general anemia that it finally gave way to digestive action. In the latter event the severe onset of the symptoms could easily be explained by the nervous shock of the first ulceration, while the later appearance of the typical pain may be readily traced to the gradual invasion of the deeper and more sensitive tissues.

With regard to the first condition, that of a symptomless chronic ulcer, with a violent acute exacerbation, we are not disposed to deny the possibility of its occurence. Welch found that of 11.888 autopsies studied by him from the literature of the Prague hospitals, 164 (1.4 per cent.) showed open gastric ulcers, and 373 (3.1 per cent.) cicatrices or healed ulcers that had not been recognized prior to death. Grünfeld examined 1,150 bodies for gastric ulcer, and found it present in 124 cases (11 per cent.). In 700 cases in which an examination was made, but not with a view particularly to the discovery of gastric ulcer, the latter was found in 4.8 per cent.; and in 450 cases carefully searched for cicatrices ulcer was found in 92 cases (20 per cent.). All of these were found in Copenhagen, where gastric ulcer seems to be a frequent condition. Jaksch (quoted by Brinton) in 2,330 autopsies found 113 ulcers, of which 57 were open sores and 56 cicatrices: Willigk, in 1,600 autopsies, 139 ulcers. of which 74 were open and 65 cicatrices. Finally Barker. in February of the present year. showed in his clinic nine cases of chronic ulcer of the stomach, all of which had had typical symptoms for many months, and in several cases he verified his diagnosis at operation. He speaks of the condition as "a very common form of gastric disease such as you may often see treated in the outpatient department or the medical wards." All of these cases were seen within a short time.

And yet in spite of the frequency of chronic gastric ulcer I hesitate to believe that the symptoms of the case under discussion point to it as a probability here. If symptomless before, why the sudden outbreak with no known cause; and still more cogent. why the prompt healing and seemingly perfect convalescence of what is often and even usually an obstinate condition? These reasons are neither conclusive nor final, but they are forceful and accord with our knowledge of the usual behavior of gastric ulcer and must be considered. I do not, therefore, exclude the possibility of a chronic ulcer, though I do not consider it the most likely condition.

Upon the second possibility, that of an acute ulcer of embolic or thrombotic origin, I must look with still less favor, since there was no condition known to be present that would suggest an embolus; while the only known possibility of a thrombus rested in the anemic condition which was of long standing but of a temporarily less degree than usual owing to treatment. We must. moreover, again consider the rarity of thrombosis and embolism at this point, and the important fact that of the few times that the latter condition occurs by far the most numerous are at the cardia. Walsh states that no one has ever experimentally produced a solitary embolus of the pylorus. Hemorrhagic infarct has, however, been observed postmortem in the stomach, both alone and with ulcer formation; and in such cases thrombosis may have been present, either as a causal or consequent condition. Rindfleisch reports such a case, and v. Recklinghausen another. Both state, however, that the condition is a great pathologic rarity; and this very rarity prevents our considering thrombosis as a probable condition, in the presence of a more satisfactory explanation.

The third suggestion is that of a hemorrhagic erosion. All authors mention this as a possible early stage of gastric ulcer, and all pathologists refer to it as a frequent postmortem finding. No one can deny that a small hemorrhage may have occurred as a result of the vomiting during the first days of the attack. And yet there was a gastric condition present at the earliest stage that needs more of an explanation than that of an erosion, and which possibly, and to my mind probably, was due to a superficial ulcer already present; this in view of the later symptoms. If a hemorrhage occurred, its immediately surrounding area might easily have offered a susceptible focus for gastric digestion; but this would not have explained the early violent attack (which in some features suggested gastric perforation) as well as an ulcer newly formed, still superficial and due to causes that will be discussed immediately.

We are led finally to the theory which I consider the most rational. and which I believe may be the explanation of many if not the majority of acute and chronic peptic ulcers. It has already been intimated that the most likely condition appears to have been an acute peptic ulcer, located as usual. at or near the pylorus, and due to digestion of a gastric wall rendered susceptible to such action by a long-standing anemia, a consequent poverty of blood and inanition of the part, in the presence of a hyperacid gastric juice. My reasons for arriving at these conclusions are as follows: We were fortunate to have examined the blood of the patient six months previous, and knew that it was markedly deficient in hemoglobin and to a lesser extent in red corpuscles. The appearance of the patient had from childhood suggested a chlorotic condition. During this entire time and until the attack occurred gastric digestion had been apparently faultless, and certainly was symptomless. We therefore find ourselves in the possession of two important facts; first. that the patient for months and perhaps years had been lacking in hemoglobin and red corpuscles; and secondly, that up to the time of her final onset of symptoms nothing had occurred to even attract attention to the stomach. This, we may add, is never the case in a recognized chronic gastric ulcer, which has its own succession of dyspeptic, and finally ulcerative symptoms, that are always present, though not always ascribed to the correct cause.

It has been repeatedly shown (Ritter u. Hirsch et al.) that with the chlorotic condition is often associated a hyperacidity of the gastric juice. and as if to form a combination of conditions most liable to cause self-digestion of the gastric wall, Pavy, Silbermann and others have shown that in all anemic conditions the alkalinity of the blood is more or less decreased. We have, then. in long-standing chlorosis or anemia an abnormal power in the digestive action of the gastric juice, while the main influence of resistance against this acid content, viz., the alkalinity of the blood that fills the capillaries. is removed.

There were present in our case the ideal conditions for the formation of a peptic ulcer at some point in the stomach, the entire wall of which was suffering primarily from a lack of blood in sufficient quantity and quality, and secondarily from the lack of protection ordinarily afforded by the alkalinity of a normal blood supply.

The reasons for the frequent involvement of the pylorus in digestive lesions have been repeated so often that they need not be cited here. I wish, however, to call attention to a fact with reference to the circulation of the pylorus to which I find no reference in the literature, and which to my mind lends a still greater emphasis to the theory that gastric ulcer is often if not usually dependent on pyloric anemia, or the results of circulatory disturbance. While the blood supply of the stomach is a free one, especially to the cardial end (gastric, left epiploic and the brevia), and a sufficient one to the pylorus (pyloric and the right epiploic), the venous outlet is free only from the cardial end of the stomach. The latter is drained by the large coronary vein which passes along its lesser curvature, by the left gastro-epiploic and the vasa brevia. The pyloric end of the stomach, however, has a much smaller outlet in the pyloric and the right gastro-epiploic veins, both of which are small, while the former enters the portal vein almost at a right angle, and the latter joins the superior mesenteric under the same angular disadvantage. In normal conditions, and with normal blood pressure, this venous exit is ample and able to discharge the pyloric blood at a rate prompt enough to avoid stagnation or congestion. In anemic conditions, however, in which the blood pressure is often so low that it seems impossible for the heart to force a drop from the deeply pricked finger, an outlet that is ordinarily sufficient may easily become inadequate and the cardiac activity too slight to force the pyloric blood into and against the rectangular stream of the portal system. In short, a venous congestion of the pylorus will in all likelihood be added to an impoverished arterial blood supply, a lowered alkalinity of the blood and a hyperacid condition of the gastric juice.

It must be frankly admitted that peptic ulcer sometimes occurs in cases in which there is no hyperacidity; but under such conditions as have been pictured hyperacidity seems hardly necessary to self-digestion, and a normal or even subacid condition might easily erode the depressed gastric wall. This actually occurs postmortem, as soon as the protective circulation of the gastric wall ceases to flow, and is often seen in the cadaver.

As to the frequency of association of chlorotic and other forms of anemia there is no lack of evidence. V. Limbeck states that either the chlorotic state may precede or that the stomach impairment may cause the blood condition. Welch suggests that amenorrhea, chlorosis and anemia favor the development of gastric ulcer. He seems to intimate, however, that the anemia follows (p. 487, Pepper's System) rather than precedes the ulceration. Osler goes a step farther in stating that "anemia and chlorosis predispose strongly to gastric ulcer," and both Ewald and Leube speak of a possible causal connection between anemia, hyperchlorhydria and the condition in question. Strümpell, however, believes that the influence of chlorosis may have been exaggerated. Gempt (to whom reference has already been made) seems to have been one of a very few writers to express the conviction that the anemia and the inanition consequent on it, particularly of the pyloric end of the stomach, was the primary predisposing condition.

Many interesting experiments have been attempted in the study of the pathogenesis of gastric ulcer, such as the ligation of the arteries supplying the stomach (Pavy), the introduction of multiple emboli into the gastric arteries (Panum and Cohnheim), the ligation of the portal vein (Müller), trauma through the abdominal wall (Ritter), and more recently, the cutting of the vagi (Saitta, Yzeren). In the last year experiments have been reported by Fütterer of Chicago that led him to conclusions much in line with my own theory of peptic ulcer formation. Fütterer found that in animals in whose stomachs ulcers had been artificially produced, there was a marked tendency to healing as long as the hemoglobin was present in full proportion. As soon as he destroyed the hemoglobin he found that this tendency to heal disappeared and was followed by the characteristic appearance of peptic ulcer as seen in man. From this he concludes that peptic ulcer depends mainly on the lack of hemoglobin, and states that he feels warranted in asserting "the dictum that an ulcer of the stomach can form only when there is a certain amount of hemoglobin lacking, and that it must heal when the hemoglobin percentage is increased to a certain amount." His conclusions hardly seem fully warranted, however, in the light of clinical results. There are on record innumerable instances of gastric ulcer, treated with success, and yet in the handling of which the anemia was totally neglected, because it was not considered the causal condition. Cornils cites the occurrence of a gastric ulcer in his own person, that was cured without any other treatment than rest and a purgative medication. He also notes other similar cases from his experience. Pariser in the present year in his study of gastric ulcer dwells at length on the local treatment by remedial agencies, and barely mentions the treatment of the anemic condition. In fact, few only of the text-books emphasize this need, and their authors have all of them cured gastric ulcer perhaps many times by simple and primarily local methods. We must not forget, however, that all modern forms of treatment include absolute rest in bed and that such a provision means less of a drain on and therefore a gradual bettering of the blood supply, though probably not an increase of the percentage of hemoglobin. It seems necessary to believe that in men both local and systemic treatment are required; but it is equally certain that peptic ulcers occur in individuals with a high hemoglobin reading (cases cited by Cabot, Greenough and Joslin, etc.), and that often they heal without any change in the hemoglobin percentage. The latter fact is evidenced by the large number of cicatrices (i. e., healed ulcers) found postmortem in cases that have had no treatment whatsoever, and have died as the result of another condition.

We must agree with Fütterer, notwithstanding, that the hemoglobin percentage is an important matter, both in the causation and in the treatment of the condition, and only differ from his belief that it is the only or the main factor in the case. Cabot in 1897 reported 28 cases of gastric ulcer, of which 13 showed less than 50 per cent. hemoglobin, and only 4 over 80 per cent.; while of the 21 cases in which the red corpuscles were counted 5 had under 3,000,000, and the average red cell count was 3,800,000. As a rule the color index was low, though Cabot quotes Osterspey to show that it may be high. He also quotes Grawitz in citing a case of peptic ulcer in a very pale girl whose hemoglobin registered 90 per cent. and later 91 per cent., and in whom the red corpuscles numbered 4,140,000, and later, 4,340,000. In this case, however, the dry residue of the serum was only three-quarters of the normal amount, and the girl was really anemic, the contradictory blood picture being due to anemic concentration. Oppenheimer has also called attention to the great pallor in certain cases with normal counts and hemoglobin readings. He cites six cases of gastric ulcer, however, of which the highest reading was hemoglobin 75 per cent., with 4,100,000 red corpuscles, and the lowest, hemoglobin 25 per cent., with 1,200,000 red corpuscles, while the other cases ranged between these figures. Greenough and Joslin have studied the cases of gastric ulcer treated in the Massachusetts General Hospital for the years 1888-98, and out of 13,097 patients treated found 187 cases of gastric ulcer (1.4 per cent.). There was pallor in 131 out of the 164 patients regarding whom any note of this condition was made. Hemoglobin and blood estimations were made in 73 cases, in 34 of which the hemoglobin was below 50 per cent., and in 64 below 80 per cent. The red blood cells were counted in 43 cases and in 24 the count was below 4,000,000. The writers seem to look on the anemia rather as a symptom than as a cause. DaCosta reports 20 cases of gastric ulcer in all of which the hemoglobin was below 80 per cent., in 8 below 50 per cent.; the series averaging 57.8 per cent. The red blood cell count averaged 4,017,000. Nearly all authorities note an absence of leucocytosis, though this is not an invariable rule.

A number of interesting cases somewhat similar to the one reported in this paper have appeared in recent medical literature, among which Maunsell reports one of a servant girl who had suffered from anemia for some months, and for some weeks from uneasiness in the stomach. Perforation occurred with a sudden onset of pain. Death followed the operation and at the autopsy "a single ulcer of the acute type" was found.

Shettle reports a case of "an anemic girl aged 17 years" who "had suffered from anemia with dyspeptic symptoms for some time, but had none of the typical symptoms of gastric ulcer." Suddenly she had pain, fainted, vomited, and then ensued general abdominal pain. Operation was performed, and an ulcer was found near the cardia.

Goodhue cites two cases, one of a woman 24 years old and six months pregnant, "anemic and chlorotic since puberty, with amenorrhea, dysmenorrhea, and metrorrhagia, at different times." Miscarried on Sept. 14, 1893. At this time gastralgia, but no other symptoms than those of dyspepsia. On November 21 of the same year she experienced nausea and coffee-ground vomit; there was blood in the vomit and feces, and burning and boring epigastric pain. The case finally recovered.

His second case was noted in an anemic and neurotic woman of 32 years, a nurse who had had amenorrhea since puberty. For four or five years she had had digestive troubles. Suddenly perforation took place with pain and vomiting of blood, though the case was not properly diagnosed until a late consultation, and death followed. The autopsy showed an ulcer in the pyloric region.

Finally Stratton, in March, 1902, reports a case in which the pain was more severe when the stomach was empty, with spells of pain coming and going every four or five hours. The attacks lasted a week or ten days, and were induced by exposure to wet and cold rather than by food. A tender spot always localized over the epigastrium in the same area was present, but the patient never vomited blood, food, or gastric secretions. The tenderness entirely disappeared between attacks. Finally, under an unusual exertion, there was sudden intense pain; then none for 10 minutes; and again a violent pain in the epigastrium. Operation was performed and perforation found in the anterior wall near the pylorus. This case is cited especially because of its many features resembling those of the one now reported by myself. Before summing up our conclusions it will be well to note that Saitta, in 1900, in treating two cases of gastric ulcer (one following long-standing gastrosuccorrhea, and the other succeeding digestive disturbances, with nervous involvement in both cases, as well as chloro-anemia, and neuralgia), thought of the vagus as the cause of the trouble, and as furnishing a predisposed soil. He severed the nerve on both sides in 16 rabbits, and fed them on a weak solution of hydrochloric acid. By this means he induced multiple ulceration, with general gastritis; in control animals, with the pneumogastrics intact, the procedure had no effect.

Yzeren, in 1901, reported a series of experiments, also in rabbits, to justify Talma's theory that gastric spasm is the underlying cause of chronic peptic ulcer. By cutting the vagi below the diaphragm he found that he could produce ulcers corresponding absolutely with those occurring in the human stomach. They appeared several days after the operation, and showed no tendency to spontaneous healing. Usually only one ulcer appeared, and this in the pyloric region close to the lesser curvature. It was preceded by necrosis of the mucosa, while the structures more remote from the pylorus were not affected. Gastro-enterostomy or incision of the pylorus seemed to prevent or delay the ulcerative process. After the operation the stomach was distinctly harder, indicating spasm, this spasm of the gastric muscle helping to produce anemia of the mucosa, and resulting in necrosis. As the muscle is thickest around the pylorus, the lesion is most likely to be situated here. Both of the latter observers, it will be noted, produced, and studied the effects of, *a local pyloric anemia.*

Ewald, in his paper before the German Congress on Internal Medicine, held during the present year, considers Yzeren's theory very improbable, and believes that both conditions (ulcer and spasm) are the result of hyperacidity. His own figures, however, would rather convince the unbiased observer that in at least 76 per cent. of the cases some other cause than hyperacidity was at work, since in just this percentage of cases he found hyperacidity absent. He states that he has seen over 1080 cases of gastric ulcer in the last 10 years of which 34.1 per cent. showed hyperacidity, 66.8 per cent. normal acidity, and 9 per cent. subacidity. Blood was frequently found in the contents, and hematemesis was present in 203 out of 364 patients (54.5 per cent.).

Our conclusions with regard to the causation of peptic ulcer of the stomach are as follows:

1. In many, and perhaps in most cases, a high grade of anemia precedes the appearance of peptic ulcer, and this anemia usually assumes the chlorotic form.

2. With few exceptions, gastric ulcer is attended by the symptoms of marked anemia. In certain cases in which the blood picture fails to show a reduction in the hemoglobin percentage and in the number of red cells the fact seems to be due to concentration of the blood dependent on anemic causes.

3. General anemia implies anemia also of the pylorus, and consequent inanition of its mucous membrane.

4. The venous outlet from the pylorus is one that in anemic conditions would predispose still further to an unhealthy condition of the muscular and membranous coats of the pyloric wall.

5. Hyperacidity is usually present in chlorosis and often in other forms of anemia; and when present in any condition it is an influence predisposing to gastric ulcer, when associated with an anemic gastric wall.

6. Hyperacidity is not essential to self-digestion of the stomach wall, provided that wall lacks the proper nourishment and stimulation of a healthy or sufficient blood supply.

7. Any form of hemorrhage, menstrual, operative, or anemic, may either predispose to, or accentuate an already present anemic condition of the gastric wall, and

such hemorrhages are *de facto*, often followed by gastric ulcer.

8. Finally, the foregoing facts, in association with the general one that gastric ulcers are seen almost invariably in anemic subjects, warrant the conclusion that blood poverty is a leading, and the usual, predisposing cause of peptic ulcer.

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DISCUSSION.

Dr. Fenton B. Turck, Chicago—This subject is one of great interest and importance. The first part of the paper has dealt with well-recognized etiologic factors. He did not call attention to the recent observations made with special reference to the muscular activity of the stomach in which it was determined that the lack of motility was one of the chief factors in cases of gastric ulcer. Recently Kocher called attention to the ulcers found in the jejunum following a gastro-enterostomy; here a true peptic ulcer was found. The conclusions reached were that such cases, in which there was a lack of motility and a lack of the muscular contraction together with disturbances of the splanchnic circulation, especially the portal circulation and circulation in the intestines, resulted in true peptic ulcers of the jejunum. In my own observations carried out one year ago I made a large number of experiments with guinea-pigs and rabbits, keeping them in small cages in which they scarcely had room to turn around, confining them in the dark; at the end of a certain time only seven or eight were alive, some showing the chlorotic type of blood, and in two were found ulcers which had the appearance of peptic ulcers which failed to heal and showed other evidences of true gastric ulcers. The evidence adduced seemed to show that, clinically, there were two important factors in their causation: 1, disturbance of the circulation; 2, a lack of gastric tone, or motility, or gastric myasthenia. Bramwell has shown that most cases have occurred in girls coming from the country leading sedentary and indoor lives. It has been noted that girls with poor circulatory disturbances since early childhood at puberty acquire these ulcers and it is stated that the early environment and personal hygiene were the direct factors at play, causing a disturbance of the circulation in the splanchnic area; this interference with the muscular tone of the stomach accounts for a large number of the lesions.

Dr. James J. Walsh, New York—With regard to the causation of gastric ulcers it is pretty well recognized that the basis for the development of the lesion is an anemic condition, and I think that nearly every general practitioner has realized that all such cases have a traumatic element which may occur in many ways as, for instance, in cooks, from swallowing hot food; in seamstresses, from the vibration of the sewing machine against which they lean; in those who use the knitting machine, from the same kind of vibrations; in typewriters, from vibration of the machine against which they lean; and in clerks, from leaning against the desks. I have seen two cases occurring in men. One was a carpenter who leaned heavily against his chisel while smoothing boards. The other was a shoemaker who cut leather while holding it firmly pressed against his stomach. Among the poorer classes, the wearing of old corsets poorly made may have a causative effect, because of inequality of compression that interferes with the circulation of the abdominal wall and reflexly the stomach wall and because of the traumatic effect through a thin abdominal wall on the stomach itself. The prophylaxis of gastric ulcer would seem to demand the warning of anemic patients against all such possibilities.

Dr. H. B. Favill, Chicago—I think we all agree with the general importance of this subject and its general interest and, also, with the general clinical conditions preceding the trouble. But the most interesting point in regard to it is the active determining factor to be found in the deep ulceration, the underlying factor being acknowledged. I am of the opinion that the recent view advocated, and becoming well established, that there is a lack of hemoglobin, and that this lack of hemoglobin is an essential factor, without which such ulcerations will not take place, is to be kept in mind. It is reasonably well established in a considerable wandering literature that, experimentally, defective hemoglobin can be shown to be an adequate determining cause. Without going further into the point for the sake of argument I only want to say that this bears on the subject of therapeutics enormously. If it is true that defective hemoglobin is the essential element in such ulcers, it certainly is true that the restoration of the hemoglobin is the most essential element in restoring the integrity of the mucous surface. Rectal feeding and rest in bed, then, is not the rational method of dealing with ulcers of the stomach if their genesis is as it is supposed to be. This is all the suggestion I care to make, although the whole subject, viewed from this point, seems pregnant with importance, bearing on the management of the condition.

Dr. Willson, in closing—I am sorry that in the short time at my disposal I could not make reference to the enormous amount of experimental work that has been done in this line. All of these experiments have led to the conclusion that there is either a local or general anemia present in every case of gastric ulceration, and that when this condition of anemia is corrected there is a marked tendency to heal. There seems also to be no question, clinically, that the great number of cases of gastric ulcer occur in patients who have suffered from an evident anemia, and that this anemia usually assumes the chlorotic type. Many of these ulcers follow hemorrhage of one form or another. Welch has referred to the frequency of cases that occur at or about the menstrual period, to which the name of "menstrual ulcer" has been given. On the other hand, gastric ulcer may occur in persons with a perfectly normal blood count, who seem to be in a state of good bodily nutrition. Moreover, for many years gastric ulcer has been treated without reference to the blood condition, and many cases have been completely cured (to say nothing of those that have cicatrized and escaped recognition until the postmortem examination). I have already shown that these facts call into question the correctness of such sweeping conclusions as those arrived at by Fütterer and others. I do not, therefore, wish to take the ground that gastric ulcers occur only in patients who have an evident blood poverty; or that they heal only when the blood supply has again been perfected. But that when blood poverty is present, whether local or general and whether of quality or quantity, ulceration is likely to occur; and that both the occurrence of the condition, and the likelihood of its healing, bear an intimate though not an invariable relation to the quality and quantity of the pyloric blood supply.

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THE LESIONS IN THE NERVOUS SYSTEM IN RABIES.

Specific lesions are often of importance in the diagnosis of disease. In a case of rabies a method of rapid diagnosis, by means of histologic examination of the nervous system for instance, has long been sought because of the importance of recognizing the existence of rabies in animals as well as in man. In the case of dogs, for instance, suspected to be mad, it may be of vital significance if a definite diagnosis of rabies could be established within two or three days. Babes held that the so-called rabic tubercle was pathognomonic of rabies. The rabic tubercle consists of an accumulation of cells, especially in the medulla and upper part of the spinal cord, around the central canal and about the motor cells. Various degenerations occur at the same time in the cells of the bulbar nuclei. Perivascular infiltration, commonly seen in many acute diseases, also occurs in rabies in which the smaller blood vessels of the cord and bulb also contain an unusual number of leucocytes and cells. But later observations have demonstrated that the rabic tubercle of Babes may also occur in other conditions, and the changes described by him in the medulla and spinal cord in rabies lost some of the diagnostic importance that he was inclined to give them. Van Gehuchten and Nelis laid special stress on the lesions observed in the ganglia. These lesions consist in the accumulation of epithelioid and round cells, largely derived from the capsular epithelium of the nerve cells; in part, also, from the blood vessels. These cells accumulate around and finally replace the neurocytes. At first these changes were regarded as specific, but later Van Gehuchten acknowledged that the destruction of nerve cells from any cause may result in similar cellular reactions. As the matter now stands the following seems to be a reasonable view to hold in regard to the nervous lesions of hydrophobia and their diagnostic significance. When present, the changes in the ganglia, taken in connection with definite clinical manifestations, constitute a trustworthy diagnostic sign of rabies. Absence of these changes does not necessarily signify that rabies is absent; the lesions in reality constitute only contributory evidence. The rabic tubercle of Babes is also sufficiently significant to acquire diagnostic importance; of most value, of course, in those cases in which it may be impossible to obtain any of the ganglia, which in all cases offer simpler and easier material for examination.

It has long been customary whenever a mad dog has appeared to immediately destroy the animal. In the interest of accurate diagnosis this custom should be replaced by confinement under suitable conditions and careful observation of the animal until such time as may be required for the clinical manifestations of the disease to become definite and typical. After the death of the animal, no matter whether early or late, spontaneous or otherwise, the materials necessary for the study of the lesions in the nervous system should be properly preserved (10 per cent. formalin solution in water will answer) and subjected to a careful examination for the lesions referred to in the foregoing. In this way it is hoped that the diagnosis of rabies may be established definitely more frequently than is now the case, and that greater accuracy of statistics and prompter application of specific treatment may be secured. It will be pardoned, no doubt, if attention is directed again to the fact that here is another instance of the value of laboratory methods in practical medicine.

QUACK ADVERTISEMENTS IN RELIGIOUS PAPERS.

There lies before us a weekly paper published in Cincinnati, under the name of "The Lookout." It is in appearance a medium for advertising proprietary medicine and the worst sort of medical fakers, with sufficient religious matter sandwiched in to allow it to masquerade as a religious paper and under this pretext to gain entrance to the Sunday-schools and homes of unsuspecting people. Although we have been informed that it is the weekly Sunday-school paper of a certain religious sect, this does not appear on the copy which is before us. The number at hand consists of 16 pages, of which a total of 4 pages is occupied by 30 advertisements of the variety indicated. On the fourth page, the second chapter of a serial story is punctuated by two of these advertisements, one of a compound which cures "spring humors," and the other of a wonderful "golden medical discovery," which cures diseases of the stomach, purifies the blood, etc. On the following page, a Sunday-school story is interrupted after about half a column to make room for a most magnanimous doctor to tell the people that he does not want any money. He has spent a lifetime in learning how to "strengthen the inside nerves" and his "method always succeeds, save where some condition like cancer makes it impossible." He insists that you owe it to yourself to read his books, six of which he offers free, one of them "for men (sealed)." On the same page, an institute in Philadelphia announces that "stammerers are being cured" and a D.D. of Indianapolis assures the reader that "those whom he can not cure, can not be cured." Almost one-half of page 6 is devoted to the exploitation of "catarrh remedies," one being embellished by the picture of a very spiritual-looking, surpliced choir-boy who, presumably, is singing the praises of the wonderful cure. Opposite the page given up to the "prayer-meeting," a complete page is assigned to what must be a very remunerative advertisement. There is a full-sized picture of the bottle with the picture on the label of a safe, across the top of which appears the magical Indian name. To "test your kidneys" you are directed to put some morning urine in a glass or bottle and let it stand for 24 hours when, if it is milky or cloudy, or contains a reddish, brick-dust sediment or if particles or germs float about in it, your kidneys are diseased. The test has been most adroitly worked out to suit all kinds of temperatures, and so as to allow few persons to labor under the idea that their kidneys are healthy.

Charcoal tablets and pink pills are thoroughly ventilated to the extent of over one-third of page 11. On page 12, in an advertisement of one column. Dr. X., whose funereal picture is exhibited, announces that he has surely discovered the "elixir of life." "With the aid of a mysterious compound, known only to himself, he is able to cure any and every disease that is known to the human body," and what is equally wonderful, "the remedy is free to all." On the same page, another A.M., M.D., Ph.D., whose abundant. flowing beard is sufficient evidence of his wonderful wisdom, promises to dispel cases called incurable by means of "a marvelous treatment discovered by an association of scientists." Perhaps there may be a science which deals with quackery? We will not dwell on the cures promised for cancers and tumors, deafness. fits, opium and liquor habits, piles, nor the "woman's discovery." a "simple, harmless,vegetable remedy that will quickly cure all female diseases as well as the piles without the repugnant methods in general use by physicians."

On the editorial page there is an item with the heading: "By Way of Excuse." In it we find—"A Christian can often overlook the faults of his brothers in the church. but the sinner can not. A flaw or a splash of mud will be enough to fill his soul with disgust toward the professed Christian." To any physician who reads this paper, the filth and falsehood in its advertisements are sufficient to effectually neutralize all the professions the supposedly Christian publishers could put into a large library of books. The writer of the item above referred to says that "the thief who steals a man's purse may plead that he is prompted by crying physical needs, but the man who takes nothing, but allows people to believe that he is a thief. has no such extenuating plea to make." Under which class do the management of this paper and its allied fake advertisers belong? From lack of information many of the laity may overlook the shameful and even criminal results which follow the dissemination of such a paper, but for a religious paper to act as the means by which the unfortunate sick are placed at the mercy of such quack mercenaries is beyond any excuse. The people into whose houses this paper comes may well be on the lookout. It is the duty of physicians to exert their influence to keep it out of the churches and Sunday-schools with which they and their families are connected. It is an open insult to the respectable medical men in a community for such a publication to be circulated by church people under the disguise of a religious paper.

MILD PARANOIA AND PUBLIC SAFETY.

Despite the general interest instinctively taken by the public in medical subjects, the important principles of medicine seem to become common knowledge only slowly, more slowly. indeed, in many respects than the "greatest good of the greatest number" would demand. In this direction the medical profession undoubtedly fails somewhat to do its whole duty.

One direction in which this lack of public enlightenment on truths recently developed by scientific medicine is of especial import is that as to the general nature of mental derangement. Ask the average man to briefly describe a dangerous case of insanity, and probably he would depict acute mania in its violent stage. This still to the lay mind is the typical form of madness, and the one he fears most to meet. On the other hand, the average man has a good notion of what a "crank" is, and cranks are to him a source of mirth and of innocent merriment; he has not yet learned to fear them. It is the relation of crankiness to what he already recognizes as madness that is most lacking in the public's psychiatry. In short, the people need to be taught (and who but the physician can teach?) that, other things being equal, the crank developing into the paranoiac is worse deranged and far more dangerous than even the maniac who raves. In the maniac one discovers only, in type, a quantitative disturbance in normal psychophysical function, while in the paranoiac the disorder, while almost wholly mental, is at the same time qualitative. It is on this latter account that monomania involves possibilities of motor ideation and of consequent conduct which may entangle, and that most dangerously, all with whom the patient has to do.

This important difference the specialist, of course, knows well, and from him the public occasionally gets a note of warning. It would yield a common benefit if the general practitioner also fully realized that paranoia is the typical insanity; that cranks are either mild or incipient paranoiacs; that exacerbations of the disease frequently occur without warning in what is apparently the most harmless case. making the subject perhaps the most dangerous of the mad. The delusions and the hallucinations often are most perfect and surprisingly elaborate, so that the deranged agent brings to bear through his often powerful will all of the skill and cunning both of body and mind of which man is capable, and untrammeled quite by all of those restraints, moral and emotional, which lead the sane man to balance every act before it is performed. In the paranoiac, then, the public encounters an agent absolutely irresponsible when his particular monomania is set in action by the needful external and internal conditions.

How may common knowledge of paranoia as a malady of this irresponsible nature be best spread among the people. that the dangerous ones may be the better restrained? Many families endure very much in silence before sending a loved one even to the best of hospitals for the insane, partly from pride, partly because a popular prejudice still remains from the days of cell and straw and chain. This immediate problem of enlightenment is but a part of the larger one of instruction in general prophylaxis which mankind at present needs so much. It will come soon or late.

Meanwhile there is required on the part of health officers and alienists and general practitioners a more stringent watch and registration of incipient and mild paranoiacs. It seemingly should be the duty of boards of health to keep a list of the subacute paranoiacs and even of the well-known cranks within its jurisdiction, and to keep over these a watch lest they do harm and that they may be confined in a hospital when there is need. We are only beginning to learn the proper usefulness of boards of health. Ever better and better the victims of the contagious fevers and other infectious diseases are isolated from their fellows for their common good. Paranoia should be added to this list for reasons similar in effect. The time seems ripe and, indeed, over-ripe, when patients suffering from even a mild attack of the always dangerous monomania should be watched lest they harm needlessly themselves, their friends or others. That they are not yet so constrained is one of the lacks of our day which men a few years hence will find difficult to understand.

PREVENTABLE BLINDNESS.

About twenty years have passed since Credé showed that gonorrheal conjunctivitis of the new-born, the scourge of maternity hospitals and the cause of so much blindness, can be positively prevented. Every text-book on the eye has since that time described Credé's method and preached its necessity. Every text-book of obstetrics has contrasted the state of affairs before and since the introduction of "Credé" in lying-in institutions, and yet how little is this simple and efficient prophylactic used outside of hospitals.

Some years ago Cohn learned by means of statistic correspondence with all physicians in Breslau, that in that city 2 per cent. of all children born in private practice were still allowed to contract the disease and risk blindness. The same oculist, so well-known for his statistic researches, has recently shown that in institutions for the blind in Germany 20 per cent. of the inmates still owe their blindness to the neglect of the obstetrician. This percentage, contrasted with 28 per cent. of 25 years ago, shows but a very small progress in preventive medicine in actual practice.

Yet Credé's method has been almost universally employed in hospitals and no voice has ever been raised against its efficiency. Many series of thousands of cases have been published by different authors and all agree that even with 10 per cent. or more of demonstrable gonorrhea in the mothers the offspring are absolutely protected by the faithful employment of nitrate of silver instillations. It has been urged, however, that Credé's method may cause an unpleasant, even an inflammatory, though not dangerous, reaction of the conjunctiva. It was especially Cramer who recently again described undue conjunctival irritation following the use of nitrate of silver in babes.

In an able article, written in a tone of conviction, these objections to Credé are refuted by Leopold.[1] He shows by quotations from Cramer that the latter did not use Credé's method with the simplicity and gentleness recomended by Credé himself. Credé's original directions were to open the eyes immediately after the bath, and to allow a single drop of a 2-per-cent. solution of nitrate of silver to descend from a glass rod on the cornea by contact. No other manipulation of any kind was to follow. By carrying out these directions literally no unpleasant reaction was seen by Leopold and his assistants in some 30,000 instances. The efficiency of the method is illustrated by the records of the year 1898. Among 2146 birth there were three instances of conjunctivitis and all three could be traced to inefficient applications of Credé's method by some untrained pupils during a rush of obstetric work. A later secondary infection can, of course, not be prevented by the use of Credé's installation at birth, which counteracts merely the infection at the time. In a final note, Leopold adds that he has used a 1-per-cent. solution of nitrate of silver on the last series of 698 children without provoking even the slightest irritation and with absolute prevention of primary infection of the eyes.

Most physicians realize to-day that in every instance in which the obstetrician can not be sure of the absence of gonorrheal infection (and how often can he be?) the slight trouble of using Credé's method is repaid by the certainty of avoiding blindness. But unfortunately, there are some who will not profit by the experience of others and who will have to see personally the havoc done by conjunctivitis neonatorum before they will take the pains to guard against it.

THE PSYCHOSES COMPLICATING TYPHOID FEVER.

Symptoms referable to the nervous system are peculiarly distinctive of typhoid fever. They may appear at any stage of the disease, from the very onset far into convalescence, and they are to be attributed in part to the intoxication resulting from the underlying infection, in part to the pyrexia and in part to the secondary asthenia and the attendant changes in the fluids and tissues of the body, together with the individual predisposition. Of these symptoms headache is the most common, while sleeplessness, delirium, stupor and muscular twitchings are fairly constant. More persistent mental derangement is much less frequent, having been observed by Curschmann in but 42 patients among 4,000 cases of typhoid fever. In 35 of these the mental disturbance occurred during the febrile stage, in 2 during defervescence and in 5 during convalescence. In 32 the mental state was one of melancholia or quiet delirium, with or without hallucinations, while in the remainder conditions of excitement or even maniacal states were observed.

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[1] Berliner klinische Wochenschrift, No. 33, 1902.

In a recent communication Dr. Clarence B. Farrar[1] records four cases representing types of psychoses occurring in connection with typhoid fever, and discusses current views with regard to the effects of the typhoid process on the mental functions. As a result of this study of the subject he points out that typhoid fever attacking a sane individual may leave him free from psychic symptoms or give rise to all gradations of mental disease. The severity of the symptoms does not necessarily stand in relation to the height of the fever or the intensity of the infection. Persons of psychopathic heredity are more prone to alienation, especially initial delirium. than those not thus burdened. A protracted exhausting fever predisposes to an asthenic psychosis. A second or a third attack of typhoid fever is more likely to be complicated by mental troubles than the first. Initial delirium is the rarest form of mental disease observed in connection with typhoid fever, and it exhibits the most rapid course and has the worst prognosis, over 50 per cent. of such cases terminating fatally. It is essentially the expression of a severe intoxication and it is often responsible for error in diagnosis, so that in any case the association of mental derangement with fever justifies the suspicion of typhoid fever. The psychoses of the febrile period are the most frequent and afford the best outlook, although 25 per cent. persist for varying lengths of time into or after convalescence. They are especially attributable to the elevation of temperature and its consequences. The asthenic psychoses—excepting isolated delirious conceptions and cases of typical collapse delirium—present a long and tedious course and a doubtful outlook, with evidences of serious cerebral changes. They develop on a basis of exhaustion, anemia and malnutrition.

From the evidence it must be concluded that a post-typhoid predisposition. in the form of irritable weakness, exists, on which may develop late psychoses, with a dubious prognosis. As a result of the metabolic derangement accompanying severe infections an attack of typhoid fever has been followed in many instances of so-called recoverable psychoses by temporary improvement or recovery. Neither in its clinical nor in its anatomic picture is the psychosis of typhoid fever distinctive. The elements of intoxication, infection, temperature, exhaustion, anemia, of whatever origin, may cause similar or indistinguishable processes. The determining factor of susceptibility to mental disorder as well as of the course and event may be expressed, in a word, as the mental reaction coefficient of the individual together with the physical basis.

THE REPORT OF FAILURES.

A British dentist had to defend a suit for malpractice which was based on, or rather incited by, his publication of a case presenting features of interest to his profession. The patient's attention was called to the publication and she interpreted it as a confession of bad management of her case, hence the suit. At the trial it was conclusively proved that the accident was not due to any want of care or skill, and the prosecution failed, but the instance is a suggestive one. Physicians are often blamed for not publishing their failures and their accidents, and it is generally assumed that their reason for this is the dislike to say anything that might reflect on their skill. If such publication is even remotely liable to involve them in malpractice suits they have a still better reason. It will be unfortunate, however, if such a cause should prevent the publication of valuable case reports in medical journals, and it would seem that in some way or other such publication could generally be made unavailable for any hostile purpose. The public does not, as a rule, read medical journals, but there are some more or less remote chances that a patient may come across and recognize an account of his own case. Hence it would be advisable in reporting unfavorable cases to avoid making them too intelligible to the lay public or giving unnecessary data that might lead to their identification. The risk of trouble is small, but it is well to minimize it still more if it can be done. It is to be hoped that this case will not have the effect to deter physicians and surgeons from giving out what may be of value in their experience, and that it will not in any case ever lead to the suppression of important facts.

AGGLUTINATION OF TUBERCLE BACILLI AND NEW TUBERCULIN.

During the past few years there has been a great deal of investigation devoted to various phases of agglutination, and of late the agglutination of tubercle bacilli especially has received much attention. It seems that the principal result of the work on agglutination of tubercle bacilli so far as its practical application is concerned, may be summarized in the statement that the agglutination of tubercle bacilli does not occur constantly or regularly in tuberculosis. Consequently the reaction, at the present time at any rate, does not constitute a practicable, available diagnostic measure. This is the conclusion of Thellung,[1] who has studied the question quite extensively and also experimentally. He finds that the subcutaneous injection of Koch's bacillary emulsion in doses of a few milligrams leads to the development of substances in the blood serum of the guinea-pig that agglutinate tubercle bacilli more markedly than the serum of non-tuberculous animals. The agglutinating power is produced with difficulty in the case of rabbits. At the same time, Thellung made the observation that Koch's new tuberculin did not have a favorable influence on the course of experimental tuberculosis in guinea-pigs and rabbits. This new tuberculin consists of an emulsion of dead bacilli. It is of interest, further, to note that two guinea-pigs injected with ground bacilli, such as are furnished by the Höchst Company, died from tuberculosis, and that of two guinea-pigs injected with

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[1] American Journal of Insanity, lix, 1, July, 1902, p. 17.

[1] Centralbl. f. Bact., 1902, xxxii, 28-48.

Koch's new tuberculin (bacillary emulsion) also furnished by the Höchst Company, one became tuberculous. Hence, both these preparations contained viable tubercle bacilli virulent for guinea-pigs. Now, if such preparations give rise to tuberculosis in guinea-pigs they may just as well give rise to tuberculosis in human bodies when injected. Certainly manufacturers of preparations of this kind must be able to guarantee their non-infectiousness if they desire the confidence of physicians.

CHROMOPHILE CELLS AND CHROMOPHILE ORGANS.

There occur in various parts of the body peculiar cells. often aggregated into small nodules, which for some time have attracted much attention, notably from histologists. These cells are characterized especially by the fact that they assume a brown color in solutions of chromic acid and its salts. These structures occur mostly in the regions through which passes the sympathetic nervous system, and in many cases they are connected with the sympathetic nerves. They differ from sympathetic ganglia as ordinarily understood because of the preponderance of cellular elements. The so-called carotid gland and the medullary substance of the adrenals consist, to a large extent at least, of chromophile cells.

In a recent article Alfred Kohn[1] gives these mysterious cells and organs a comprehensive consideration, reviewing their occurrence in various parts of the body in different kinds of mammals, reptiles. birds, etc., in all of which they occur with marked regularity. Because of their similarity to ganglia he calls them also paraganglia. He reaches the conclusion that they are derived from the embryonal *Anlagen* of the sympathetic ganglia, the cells early acquiring their affinity for chrome salts. When in the form of small nodules and flattened bands they constitute often independent structures, generally located in a plexus of the sympathetic, but there also occur single cells and smaller masses deposited in sympathetic ganglia and nerves, and the chromophile cells in the medullary substance of the adrenals of higher vertebrates he also regards as of the same nature and origin. So far as has been determined, extracts from these chromophile organs have the power, when introduced into the circulatory system. of greatly raising the blood pressure, as has been shown repeatedly in the case of the adrenals, and by Biedl and Wiesel for the carotid gland or paraganglion intercaroticum. This is virtually all that is as yet known in regard to the physiology of these structures. The affinity for chrome salts may be of importance in the recognition of tumors arising from Kohn's paraganglia. This has been demonstrated already in one instance by Stangl.

CRIMINAL ABORTION.

It is unfortunately too common an event for the physician to have to do in some way or other with criminal abortion. He may be directly asked to commit or to assist the crime for one of his patients. He may, if unwary, be led to do something unwittingly that may aid it, or he may be entrapped into a situation that puts him in a decidedly bad light before the law, though actually innocent of any real wrongdoing. Many young physicians and some older ones, from lack of knowledge or of due precautions, have found themselves in situations, the possible outcomes of which were not quite pleasant to contemplate. If the patient did well, all was right, but if not, very serious charges might result and all without any real crime or evil intent. In the July issue of the *Medical Critic,* Dr. Frederick Griffith writes on this theme, giving some aptly illustrative cases in his experience. He endorses Dr Barton Cook Hirst's recommendation that the physician, when called in to a case where an abortion has been performed, refuse all responsibility for the patient unless a confession exonerating him from any connection with the crime is given, signed by the patient and the signature duly witnessed by one or more persons. If the woman recovers, this evidence may be destroyed—though for the physician's safety it might perhaps be better to preserve it—but if death is imminent the confession can be forwarded to the district attorney without delay. This, according to legal opinion obtained, would establish the physician's freedom from complicity or criminal intention in Pennsylvania and probably elsewhere. This is a simple enough precaution, and it would also be well for the young physician in such a case to have the counsel of some more experienced practitioner. Abortion is a crime that seldom comes to light except where followed by disaster, and there is danger where this occurs; as Dr. Griffith says, "the law is anxious to reach offenders of this sort, but has but a short arm, which falls upon the innocent physician, who. careless of personal interest, allows circumstances to work against him." Any one who accepts the responsibility for these patients must, as he says, "be as wise as a serpent and harmless as a dove," for there is hardly any class of cases that come under a physician's care that present more ticklish problems to try his worldly wisdom and his professional *morale.*

SEROTHERAPY IN CANCER.

Whatever promises to be even a palliative in the treatment of cancer is worthy of the attention of the therapeutist. Especially is this the case if the agency or procedure is along the lines that have been successfully followed in other disorders, though as yet untried or unsuccessful in the management of malignant growths. The suggestion of serotherapy of cancer is a very natural one. but hitherto nothing really encouraging has resulted from experiment. Jensen, it is true, had noticed modification in cancer growth in mice, shriveling and suppuration of the tumor following serum injections from cancer tissue. but nothing that seemed significant enough to warrant any strong expectations of good results in actual therapeutics. Very recently, however, Von Leyden and Blumenthal have carried their research further and report[1] actual beneficial effects on human patients. They first experimented on cancerous dogs, using serum expressed from other cancerous growths on the same species, and cultivated through rabbits, and produced softening and liquefaction of the growth, and later, on another dog, with direct injections of the canine cancer extract with still better results, the tumor dwindling down to a mere relic of its former self after two months' treatment. This was extirpated and its cancerous nature verified by the microscope. These encouraging results led them to experiment still further on human subjects. They employed an extract obtained by crushing and compression from a freshly removed human cancer on three patients, having first determined the harmlessness of the injections on dogs. In one case of carcinoma of the bladder and urethra of many months' duration, the patient bore the injections well, the urinary functions improved, the conditions became more comfortable generally, and the cancer cells also disappeared almost entirely from the urine. The patient died suddenly from heart disease and at the autopsy it was found that the tumor had been reduced from the size of an apple to some insignificant lumps and the previously existing swelling and infiltration of the inguinal glands had entirely disappeared. There were no metastases. Another patient, with uterine carcinoma under observation, has greatly improved in general condition, the pains have diminished and gradually disappeared. These results, imperfect as they are, are encouraging and indicate that we have possibly a still further remedial resource for this dreaded disease. As the authors say, more time and observation are needed before anything definite can be claimed, and this line of research deserves still further development.

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[1] Prag. Med. Wochenschr., 1902, xxvii, 325-328.

[1] Deutsch. Med. Wochenschrift, September 4.

Medical News.

ALABAMA.

Birmingham Medical College has nearly completed the new building and will be ready to receive students at the opening of the college year, October 1.

Infirmary Almost Ready.—The New Providence Infirmary, Mobile, which has been erected at a cost of about $100,000 and has been constructed in accordance with the most advanced hygienic ideas, is almost ready to receive patients.

Personal.—Dr. Nicholas D. Richardson, Athens, has received an appointment in the U. S. Public Health and Marine-Hospital Service and will be stationed at Angel Island, Cal. ——Dr. Arthur M. Brown, Birmingham, was given a banquet by prominent local colored citizens and physicians, August 26. He has located in Chicago for practice.

Florence Healthy.—On account of reports circulated through the northern part of the state that typhoid fever and other diseases were epidemic in Florence, an investigation was ordered by the authorities. The health officer reports the rumors false, and that there is only one case of typhoid fever in the city, and furthermore that that case was imported.

CALIFORNIA.

Hospital Donation.—Drs. A. J. Comstock, Jr., Thomas E. Cunnane, Frederic H. Huning, Ventura, and Dr. John P. Hinckley, Fillmore, have donated an *x*-ray and static apparatus to the Elizabeth Bard Memorial Hospital, Ventura.

Personal.—Dr. Elmer E. Stone, San Francisco, chief inspector of the State Board of Health of California, has been elected superintendent of the Napa State Hospital for the Insane, vice Dr. Alden M. Gardner.——Dr. Howard Morrow, San Francisco, has been appointed city bacteriologist, vice Dr. Wilfred H. Kellogg, resigned.

Recrudescence of Plague.—The plague situation at San Francisco is becoming more alarming. In August seven fatal cases of the disease were officially reported, five more of which occurred since the 18th. The autopsies are made at the United States Oriental Laboratory, maintained in San Francisco by the Marine-Hospital Service for the express purpose of testing cases of bubonic plague.

Oakland Medical College Opens.—The Oakland College of Medicine and Surgery opened for work September 15. The new building had been previously thrown open for informal inspection. The officers and directors of the new institution are: Dr. Frank L. Adams, president; Dr. Carl R. Krone, secretary; Dr. Hayward G. Thomas, treasurer, and Drs. Dennis D. Crowley and Edward N. Ewer, directors.

ILLINOIS.

Hospital Incorporated.—The Beth Saida Hospital at Decatur has been incorporated, without capital and not for profit.

Typhoid in McDonough County.—The Macomb Board of Health has investigated the prevalence of typhoid fever in McDonough County and reports 73 cases so far this season, with new cases developing daily. Of these 36, or nearly 50 per cent., occurred in Macomb.

New Hospital for Pontiac.—Dr. John A. Colbourne, Ransom, formerly of Pontiac, proposes to erect a hospital building to cost from $8000 to $10,000, on land owned by him in Pontiac, subject to the following provisions: That the people of Pontiac furnish $5000 for the furnishings and equipment of the institution, and that the hospital be open to all practitioners in good standing.

Black-List in Rock Island and Moline.—The physicians of Moline held another meeting, September 9, to complete their plans for the compiling of a black-list. Nearly all present submitted lists of people they considered dead-beats, and the others are to hand in their lists soon. These names will be arranged in proper form and each physician in Moline and Rock Island will be furnished a copy.

Chicago.

The Chicago Eye, Ear, Nose and Throat Hospital has recently equipped its building with a steel fire-escape of the stairway pattern, which is also connected by steel balconies with each sleeping room in the building.

Thousands for Charity.—The will of Oscar Rosenthal, filed September 13, gives Michael Reese Hospital, Alexian Brothers' Hospital, Chicago Home for Incurables, and National Jewish Hospital for Consumptives, each $1500, and $7500 to the United Hebrew Charities.

Mortality for the Week.—The total number of deaths for the week ended September 13 was 494, equivalent to an annual death rate of 14.13 per 1000. This compares favorably with the death rate for the previous week, 15 per 1000, and with that for the corresponding week of 1901, 14.74 per 1000.

Return to Work.—Dr. R. D. MacArthur and family, from Old Orchard Beach, Maine.——Dr. and Mrs. Joseph Warsall, from Europe.——Drs. L. L. McArthur, Frank Billings, R. H. Harvey and Henry P. Newman, from a lake trip.——Dr. Paull Marquis, from Watch Hill, R. I.——Dr. Charles G. Davis, from Waunita Hot Springs, Colo.——Dr. E. Fletcher Ingals and family, and Dr. Otto T. Freer, from a trip to Colorado and the West.——Dr. and Mrs. J. Nevins Hyde, from Maine.——Dr. and Mrs. William Cuthbertson, from California and the Canadian Rockies.——Dr. E. C. Dudley, from Japan.

Typhoid on the Wane.—At the close of the week there were gratifying indications that the typhoid fever epidemic was abating. The total typhoid deaths reported—43—were 12 less than those for the previous week, and during the last three days of the week there were only five, one and two, respectively, or a daily average of less than three, as compared with a previous daily average of seven for the six weeks previous. This decrease in the number of deaths, as an indication of the decline of the epidemic, was further corroborated by the returns of cases admitted to the various hospitals. In the County Hospital there were only 240 cases under treatment at the close of the week as compared with 373 the week previous—a reduction of 35 per cent. The decrease in typhoid mortality can not be attributed to improvement in the water supply; it is due rather to the campaign of education begun by the Department of Health nearly two months ago as to the nature and cause of typhoid and the method of its prevention. Another indication that the height of the epidemic has been reached, is the increasing duration of the disease in the fatal cases. The average duration of the sickness in the fatal cases in August was 17 days. During the first 13 days of September it was 22 days, and during the last week it was more than 27 days. As the average period of the incubation of the disease after infection with the poison is two weeks these latter figures show that the infection occurred at least 41 days previous, or in the latter part of July, when the water supply was badly polluted.

INDIANA.

College to Occupy New Building.—The Central College of Physicians and Surgeons, Indianapolis, will open for its twenty-sixth annual session October 1, in its new building, which has been erected at a cost of $70,000.

Plan Methodist State Hospital.—The plans for a Methodist state hospital and deaconess home have now assumed definite shape. Up to September 12 $60,000 had been subscribed toward the project. Work will start when $100,000 has been secured, and it is confidently believed this sum will be available by Jan. 1, 1903.

Insane Hospital Dedicated.—The new hospital for the sick insane connected with the Central Indiana Hospital for the Insane, Indianapolis, erected at a cost of $110,000, was formally dedicated September 9. The building will accommodate 100 patients. Addresses were made by the Governor and by Drs. William B. Fletcher, Henry Jameson, Allison Maxwell, Patrick H. Jameson, and by the superintendent, Dr. George F. Edenharter.

Personal.—Dr. Hannah M. Graham, Indianapolis, has returned after a course of study in European hospitals.——Dr. Myron A. Boor has been appointed police surgeon and Dr. Malachi R. Combs secretary of the board of health of Terre Haute.——Dr. Charles Marvel, Richmond, has returned after several months spent in study abroad.——Dr. Frederick T. Hiner, West Lafayette, has been elected health officer of Tippecanoe County.

IOWA.

Patients Transferred.—The Iowa Hospital for the Insane, Mount Pleasant, has transferred 121 patients to the state hospital at Clarinda.

Medical College Opens.—The Sioux City College of Medicine began its thirteenth year September 10, with a freshman class of about 30.

Merger Against Dead-Beats.—The physicians of Maquoketa have entered into a combination to protect themselves against dead-beats. The patients who do not pay bills will be booked, and the physicians announce that none of them will answer a call from these unless the fee be paid in advance.

Personal.—Dr. Aram G. Hejinian and family of Anamosa sail to-day for Europe. He will do post-graduate work six months. On his return he intends to visit Egypt, Palestine and other points of interest.——Dr. J. W. Benadom, Maquoketa, was waylaid, beaten and robbed of $42, while walking near Maquoketa, August 22.

New Medical Board for Morbonia Hospital.—A medical board for Morbonia Hospital, Davenport, has been organized with the following officers and staff: President, Dr. Andrew W. Bowman; vice-president, Dr. Lee Weber; secretary, Dr. John D. Cantwell; surgical staff—Drs. Jennings P. Crawford, Edward S. Bowman, Alfred B. Hender, Frank N. Stiles and Frank E. Rudolph; medical staff—Drs. Frederick Lambach, Gustavus Hoepfner, F. J. Starbuck, Clarence T. Lindley and William F. Turner; special staff—Drs. Lee Weber and Karl Vollmer.

KENTUCKY.

In Charge of Eruptive Hospital.—Dr. Jesse I. Whittenberg has assumed charge of the Eruptive Hospital, Louisville, vice Dr. J. Brent Palmer, deceased.

Typhoid Fever Raging.—Advices from Owingsville are that typhoid fever is increasing rapidly and is of a severe type. It is estimated that there are more than 300 cases in Bath County.

To Collect Bills.—Articles of incorporation have been filed by the Doctors' Protective Association of Kentucky. The object of the association is to collect and purchase accounts, and to furnish information to physicians regarding the solvency of their debtors.

A Grateful Patient.—In testimony of Mr. Ben F. Mitchell's appreciation of the interest taken in his case by the Louisville Society of Medicine, he gave a dinner to the members of the society at his residence, September 3, at which Dr. Walker B. Gossett officiated as toastmaster.

MARYLAND.

Baltimore Deaths.—The deaths in Baltimore for the week ended September 13 were 191. Nine deaths and 81 new cases of typhoid fever were reported.

Typhoid in Maryland.—The great prevalence of typhoid fever throughout the state is attracting attention and the secretary of the State Board of Health has received requests from all over the state to inspect and analyze drinking water.

Class in X-Ray Treatment of Cancer.—Early in October a class will be organized at the Baltimore Medical College, of which the Maryland General Hospital is an auxiliary, for the study of the *x*-ray treatment. It will be conducted by Dr. Henry F. Cassidy and Dr. Francis Carey.

Baltimore Personals.—Dr. Page Edmunds is convalescing at Atlantic City from an attack of typhoid fever.——Dr. William H. Welch sailed September 18 for London, where he will deliver the Huxley Lecture at the Charing Cross Medical School.——Dr. Herbert Richardson has sailed for Jamaica.——Drs. Rufus J. Cole and Louis M. Warfield sailed for Bremen September 11.——Dr. Frederick Baetjer has started for Europe to study the *x*-ray treatment of cancer.——Dr. W. Meyers Garrison has been appointed fifth assistant physician at the New Jersey State Hospital, Morris Plains.

MASSACHUSETTS.

Nurses on Strike.—Of the 35 trained nurses employed at the Worcester Insane Asylum 24 have struck for shorter hours and because they did not like the treatment accorded them by Superintendent Hosea M. Quimby. They complain of overwork, neglect of patients and bad food.

Out-Patient Department of Mount Sinai Hospital.—This department was formally opened August 4 by the Mount Sinai Hospital Society, whose purpose is to minister to the sick among its people who can not or will not be treated by the existing institutions on account of racial and religious differences, or for the lack of knowledge of the English language. On the medical board are Drs. Charles G. Cumston, Nathan M. Goodman, Henry Ehrlich, L. Bernard Lechersack and S. Meyers.

Personals.—Dr. Alonzo L. Stickney, after 31 years of practice in Ashburnham, has moved to Cambridge.——Dr. Arthur McCabe, city physician and chairman of the board of health of Boston, has resigned and will travel for a year abroad, and also pursue studies in his specialty.——Dr. James W. Holland, acting assistant surgeon, U. S. Army, has returned from the Philippines and will reopen an office in Huntington.——Dr. and Mrs. George J. Engelmann, Boston, are in Rome and will not return until November.

The Care of Consumptives.—The State Board of Charity has sent the following questions to the several medical societies of the state and invites their replies:

> Is it necessary or expedient for the Commonwealth to make additional provision for the care and treatment of consumptives? If so, should such provision be made by establishing one large new sanatorium, or by establishing several smaller institutions; and, if several, should these be located in different parts of the Commonwealth, so as to provide for patients at sanatoriums comparatively near their places of residence?

Last year 1149 new cases of consumption were reported to the Boston Board of Health. Thus far this year 661 cases have been found, which is a decrease from the number for the corresponding period a year ago. The city has no hospital to which to remove this class of patients, many of whom really need better care than can be given to them in their own homes, which are disinfected on the removal of patients.

NEW JERSEY.

Personal.—Dr. Elmer H. Rogers, Trenton, has gone to London for a course of post-graduate study in medicine.——Dr. Daniel B. McCartie, Newark, as the result of a runaway accident, is in hospital with a dislocated shoulder and other injuries.——Dr. Frank Hosford, Newark, has been appointed assistant physician at the State Hospital at Morris Plains.

For Jersey City Hospital.—Cornelius Zabriskie, a banker of Jersey City, whose home is in Hackensack, has offered to give $150,000 toward building a new city hospital on condition that residents of Jersey City shall raise a like amount by subscription. He also makes it a condition that politics shall be kept out of the hospital management. Dr. John D. McGill of the health board says he will give $25,000 toward the public subscriptions.

Consumption Sanatorium Closed.—The sudden and unceremonious closing of the Sanatorium for Consumptives, opened by Mrs. Louis Horlacker at Morristown about a year ago, which forced the patients to seek shelter with the neighbors, and the proprietor's mysterious disappearance have caused much uneasiness among the local members of the board of health, because the existence of the institution was permitted against the protest of many citizens and the provisions of the health code.

State Home for Consumptives to be at Glen Gardner.—After months spent in searching for a suitable location the board of managers of the New Jersey State Sanatorium for Tuberculous Diseases has selected a site, and will, if the Governor approves their selection, purchase the ground and begin operations just as soon as title can be given for the tract The site selected, half a mile from Glen Gardner, Hunterdon County, includes nearly 500 acres of land, fully 950 feet above tide water, a considerable part of the land being thickly wooded The air is pure and the soil dry There is an abundance of pure water on the place Part of the tract can be used as a dairy farm The place where the buildings will be erected is sheltered from the winds The site is in a secluded place, in the upper part of Hunterdon County, yet easy of access The commission was appointed by Governor Murphy last spring under authority conferred by an act of the legislature, passed at the instance of the executive, in the closing hours of the session An initial appropriation of $50 000 was made The members of the commission are Dr Charles J Kipp, Newark, president, Dr Austin Scott, president of Rutgers College, Colonel E A Stevens Castle Point, Hoboken, Dr Obadiah H Sproul, Flemington Dr Elmer Barwis, Trenton, Dr James S Green, Elizabeth, Colonel Frank L Shepard, Elberon and Dr William S Jones Camden

NEW YORK.

Buffalo Personals.—Dr A W Bayliss and wife, who have been spending five months abroad, returned September 18——Dr and Mrs Bernard Barton returned to town from Wauakah——Dr and Mrs Herman Mynter sailed from abroad September 18 on the *Pretoria*

Stony Wold Sanitarium.—The cornerstone of the Stony Wold Sanitarium, at Lake Kushaqua in the Adirondacks, was laid with appropriate ceremonies, September 11 Under the auspices of Mrs George F Shrady a committee of one hundred women was formed to raise a fund of $100,000 for a sanitarium for consumptive working girls in the Adirondacks Mrs Seth Low and a large number of New York's leading society women were included in the list The property includes a camp and some outbuildings that have been put to use, and already a number of patients who have been supported during the hot months by individual members are enjoying the benefit of the institution One of the leaders in this good work is the wife of Dr James E Newcomb

Cornell University Medical Department.—In the issue of September 6 the statement that the new medical building of Cornell University is about to be ready for occupancy this fall applies to the Cornell building at Ithaca and not at New York City The university gives the full four years of the medical course in a separate department in New York City and it also duplicates the first two years of this course at Ithaca so as to permit students taking the arts course (degree of A B) to elect medical studies The elective system in the college is so arranged that students can obtain a good deal of the second year work of the medical school before leaving the academic department and although a student only obtains one year of credit in the medical school for this work, he is allowed electives in clinical work which give him a great advantage over the students pursuing the ordinary curriculum This is an interesting experiment in permitting practical medical electives The New York City Department has occupied its present quarters for two years and is thoroughly well established

New York City.

Bequest to German Hospital—The German Hospital has received $5000, bequeathed to it by the late John Keller

Contagion in the Schools—Through the labors of the health department over 1500 children have been debarred from the public schools of Brooklyn, chiefly because of contagious ophthalmia and parasitic diseases of the scalp

Equine Eddyism—The latest reported victory of Eddyism over disease is reported to be the wonderful restoration to health and activity of a noted racing stallion, scheduled to race next week Commenting on this, one trainer sagely remarked "It's better to nerve the beast than give him a drop of rye"

A New Bellevue Hospital Demanded—The recent report of the trustees of Bellevue Hospital makes public what has long been only too familiar to the medical profession in the city namely, that despite all that has been and can be done toward improving the present ramshackle building now known as Bellevue Hospital it will remain unsanitary and wholly unsuitable for carrying on its great work As the work of the hospital can not be interrupted, the new buildings must be erected in sections and the mayor is urged to take the first steps at once

Ambulance Surgeons.—The frequent blunders of ambulance surgeons chronicled in the daily papers emphasize the necessity of having men of riper experience in this important and trying branch of hospital service The need for this has long been recognized by those conversant with hospital work, and it is, therefore, a pleasure to note that by a new rule, which has been adopted by Bellevue, Roosevelt, the Presbyterian and the New York hospitals, no surgical interne is allowed to do ambulance duty until he has served at least six months in the hospital

More Hospitals for Contagious Diseases—Mayor Low has practically pledged his administration to increase the hospital accommodations for contagious diseases, and has expressed the opinion that to do this properly will call for the expenditure of $2,000,000 in the next three years Comparing New York and London, he stated that only 9 5 per cent of cases of such diseases were treated in hospitals in New York as against 88 per cent in London It is reassuring to learn that every pavilion of the city smallpox hospital has been renovated better accommodations provided for the convalescents, and telephones installed so that it will in the future be easy for anxious friends and relatives to obtain information concerning the condition of the patients

Personal.—Dr William H Bates, well known because of his connection with the introduction of suprarenal extract to the profession has been missing from his home since August 30 On that day he left the house, saying that he was going out of town for two or three days Nothing has been heard from him since then, and his wife being at the time in the Adirondacks the police were not notified until September 12——Long study on the problem of compounding an elixir that shall enable man to live forever has driven Dr Lorenzo J Kohnstamm insane His mind, which had been tottering for some time, has given way, and he is now a patient in the insane pavilion at Bellevue——Dr E Grant Dilworth living in a sparsely settled portion of the Borough of the Bronx, was assaulted by highwaymen but was fortunately able to make his escape

Increase in Typhoid—The report of the Health Commissioner for the week ended September 6 shows an unusual prevalence of typhoid fever For the week the number of cases reported was 219, compared with 204 for the previous week and 119 for the week before The number of typhoid cases this year enormously exceeds the figures of those of previous years, the number for the same weeks in the last two years being 83 and 114 in 1901 and 88 and 53 in 1900 How great the increase in typhoid is this summer can best be gathered from the comparison of the figures of the last month with those of the same month of the last two years The total of the last month of this year aggregates 646 For 1901 the figure was 257 and for 1900 248 In explanation of this rather striking circumstance the health department officials say that, while there is a certain increase in the number of typhoid victims this year, a considerable portion of this number are due to the increased facilities for detecting the existence of the disease Moreover, there has been an unusual number of cases which on investigation proved to be falsely reported As yet there has been no apparent increase in the number of deaths from typhoid

OHIO.

Hospital Incorporated—Niles City Hospital has been incorporated by Drs Curtis C Williams, Henry V Ormerod, Charles T Swaney and others, with a capital stock of $10,000

Municipal Health Departments Favored.—The Columbus Academy of Medicine favors a department of health for every municipality in Ohio, and has named a committee to recommend the plan to the legislature Boards of health, as advocated by the academy, will be uniform in all cities and will be composed of five members, elected for five years one member retiring each year

Personal—Dr William H Rothert Cincinnati, has been appointed assistant surgeon, Ohio National Guard, with rank of captain——Dr Arthur E Evans, Columbus, has been elected to the chair of obstetrics in the Ohio Medical University, vice Dr James U Barnhill, promoted to the chair of surgery and clinical surgery——Dr Webb J Kelly, Piqua, has been appointed division surgeon of the Western Ohio Railway

PENNSYLVANIA

Personal—Dr M R Coates, McKeesport received severe injuries in a runaway accident recently which necessitated treatment at the city hospital——Dr A W Sherrill, Crafton has been appointed first assistant resident physician at the city home and hospitals Marshalsea

Charter Refused "Natural Healers."—The application for a charter for the Sheppard School of Natural Healing, Pittsburg, has been refused by Common Pleas Court No. 2. The institution had a capital stock of $25,000, and was formed "to conduct a place for the care of sick and disabled persons and for the inculcation of the principle of natural healing."

Marine Hospital at Pittsburg.—Bids for a site for the Marine Hospital which Congress has authorized in Pittsburg were recently opened at the Treasury in Washington. As the maximum expenditure for site and buildings is $125,000, most of the bids are too high for consideration. The specifications prescribed that the plat of ground should not be less than one acre nor more than four acres. Surgeon-General Wyman expresses his belief in the great need of such a hospital in Pittsburg, where rivermen having served two months or more may be treated at the expense of the government. Many of these men now have to be sent for treatment to the Marine Hospital at Cincinnati.

Philadelphia.

To Decline Re-election as Dean.—It is stated on good authority that Dr. John Marshall, professor of chemistry and toxicology and dean of the faculty of medicine in the University of Pennsylvania, will refuse re-election as dean for the coming year. Dr. Marshall wishes to be free to devote all his time and energy to the subjects of his department.

Typhoid Fever Increasing.—In the two weeks ended September 6, 256 new cases of typhoid fever were reported to the Bureau of Health. The number of new cases has been increasing weekly since the early part of August. An investigation made by Assistant Medical Inspector Dr. Thomas J. Beatty showed that quite a large number of cases now under treatment in the city contracted the disease while the subjects were on vacation in the country, at Atlantic City and other summer resorts.

Personal.—Dr. Hannah T. Croasdale has resigned from the Woman's Medical College of Pennsylvania, where she has been for thirty years professor of gynecology. Her successor will be Dr. Ella B. Everitt, who for the last six years has been chief resident and operating physician at the Woman's Hospital of Philadelphia. Dr. Everitt is succeeded by Dr. Alice Seabrooke, of the Methodist Hospital.——Dr. Edith W. Cadwalader, of the Woman's Hospital, will go to Paris to pursue special studies.——Dr. John Marshall is visiting Dr. George A. Piersoll, professor of anatomy in the University of Pennsylvania, at Merion, Mass.——Dr. Joseph McFarland has gone on a trip to Europe.

Hospital Bequests.—Miss Harriet S. Benson, noted for her numerous benefactions during life, left as bequests to charity much of her estate, worth perhaps more than $2,000,000. The institutions mentioned are but a small proportion of those to profit by her will. The following receive bequests of $10,000 each: The Orthopedic Hospital; the Children's Hospital; the Philadelphia Home for Infants; the Homeopathic Hospital; the Home for Incurables, and the Bethesda Children's Christian Home. Bequests of $500 each were made to the following: Pennsylvania Hospital; Philadelphia Polyclinic and College for Graduates in Medicine; Medico-Chirurgical College and Hospital; Wills Eye Hospital; Hahnemann Medical College; Women's Hospital; Gynecean Hospital; Maternity Hospital, Howard Hospital and Infirmary; Sheltering Arms; Midnight Mission; Children's Country Week Association, all of Philadelphia. Seaside Home for Invalid Women and Children's Seashore Home at Atlantic City; and Pennsylvania Training School for Feeble-Minded Children, Media, Pa.

GENERAL.

Essays on Preventive Medicine.—The Maltine Company announces that two hundred and eight essays on "Preventive Medicine" have been entered in competition for the two cash prizes.

Cholera in the Philippines continues at the rate of about ninety deaths daily. There were four cases of cholera and three deaths from that disease on the U. S. transport *Sherman* between Manila, which she left September 1 bound for San Francisco, and Nagasaki, Japan, where she arrived September 10. She has been quarantined at Nagasaki. A later cablegram announces that six more cases have developed and another death has occurred, all among enlisted men. The total cases unofficially estimated to have occurred in the islands up to September 16 are 59,759 cases and 41,804 deaths. Since September 1, 9 soldiers have been among the number dead from cholera.

Volunteer Surgeons to be Released.—A large number of volunteers are to be mustered out, as previously noted in The Journal. Among the reasons for this are the improvement in sanitary conditions, the more thorough acclimatization of the soldiers in the Philippines, and the cessation of hostilities in the islands. With the establishment of peace, about 400 outside stations are being abandoned. The principal cause of the increase of the medical staff was to provide for the maintenance of a large number of stations in the Philippines. At the same time, there are many vacancies in the regular army and examinations are being held frequently to test candidates for these positions.

Field Hospital Practice.—An important feature of the army maneuvers at Fort Riley, Kas., will be the arrangements which have been made for the medical department's equipment. A dispensary and hospital will be provided for each regiment, and a field hospital of 108 beds will be established for the command. The post hospital at Fort Riley will serve as a base hospital. A field hospital organized in accordance with the new regulations of the medical department is such that it can be readily divided into three parts of thirty-six beds each, and it is likely that in the present instance, when the period of hostilities commences at Fort Riley, this hospital will be divided between the opposing forces, one to have a hospital of thirty-six beds and the other one of seventy-two beds. Lieut.-Col. John Van R. Hoff, deputy surgeon general, will have charge of the medical department at the maneuvers.

Location and Its Bearing on Life Insurance.—In the medical section of the National Fraternal Congress at Denver, August 26, the question was discussed whether or not the geographical location of the person insured should change the rate to be charged. The basis of the question is the widely varying mortality rate in different localities. A committee's investigations were embodied in the report prepared by Dr. Ira W. Porter of Omaha. The average death rate for the orders for the last current year was 5.03. The mortality rate of the states shows Washington to have the lowest; its rate being 1.3. Nevada has the highest with a rate of 17. The rate for Colorado is 4.7. After arranging the states into groups the northwestern group which includes the states from Colorado to the north, has an average of 3.75, and the southwestern groups including those south of the previous group, has a rate of 2.3. The southeastern division including Florida, Alabama and other southeastern states, has the highest rate, it being 8.5. In closing Dr. Porter says: "The conclusions to be drawn from this paper I leave to you. I am more firmly of the opinion that location is an element of hazard just as much as is occupation, and that the applicant should pay for the risk assumed. In what manner this shall be I leave to the actuaries."

Brig.-Gen. Robert M. O'Reilly, who was appointed by the President surgeon general several weeks ago in anticipation of General Forwood's retirement, has relieved Brig.-Gen. William H. Forwood of his duties at the head of the medical department of the Army. General O'Reilly was recently chief surgeon of the Department of California. He will have until January, 1909, to serve as surgeon general. He was graduated from the medical department of the University of Pennsylvania, and entered the regular Army in August, 1862, as an acting medical cadet. He was appointed a medical cadet in 1864. In April, 1867, he was appointed assistant surgeon, with the rank of first lieutenant. He saw much field duty in the Indian country during the next six years. In the Sioux expedition of March, 1874, he was the chief surgeon. In June, 1875, he came east, serving successively at Fort McHenry, Md.; Fort Hamilton, N. Y.; Fort Ontario, N. Y.; Charleston, S. C., and Atlanta, Ga., and was with the troops in Pennsylvania and Maryland during the serious labor troubles of 1877. He was the attending physician to President and Mrs. Cleveland during a part of Mr. Cleveland's first term and throughout his second administration, coming to Washington in June, 1882, for duty in the office of the surgeon general, becoming in 1884 the attending surgeon. While assigned away from Washington he was with the troops in the field against the Sioux in South Dakota in the early winter of 1890. At the outbreak of the Spanish war he was appointed lieutenant colonel and chief surgeon of Volunteers. He was successively chief surgeon of the First Independent Division and of the Fourth Army Corps, at Tampa, Fla. He was also chief surgeon of the division of Cuba for a time.

FOREIGN.

German Physician Surgeon-General of Siamese Army.—Dr. T. Trumpp has been appointed by the King of Siam chief of the medical department of his army.

Lannelongue Prize.—Professor Lannelongue of Paris has presented 38,000 francs, about $7600, to the Paris Académie de Médecine for the endowment of a triennial prize.

Seventieth Professional Anniversary.—The friends of Dr. Jacobs of Cologne recently assembled to honor his seventieth "doctor-jubiläum" and his ninety-third birthday.

Marriage Bill in France.—A bill has been introduced into the House of Deputies in France proposing to exact from male and female candidates for matrimony medical certificates that they are fit to be parents.

Another Conviction of a Charlatan in Germany.—The Hanover courts have condemned to a fine of 100 marks or ten days' imprisonment, the charlatan Zwicker on account of unwarranted promises of complete cure of incurable diseases in his advertisements.

Increase of Insanity in London.—The lunacy statistics of the administrative county of London show an increase of 50 per cent. in the last ten years, the total number of lunatics being 21,369 in a population of 4,536,541. Drink and business and domestic troubles were accounted to be largely responsible.

Honors to the Memory of Pasteur.—A fine portrait statue of Pasteur has been erected at Dôle, his birthplace, and a committee has been appointed to raise funds to purchase the house in which he was born, as a permanent memorial. Besançon has also recently dedicated a bust of Pasteur as a memorial of the three years he spent there as pupil and then teacher in the lycee.

Art Prize for Richer.—The Paris Académie des Beaux-Arts recently conferred the Joest prize of $400 on Dr. Paul Richer, member of the Académie de Médecine, for his great literary work, "L'Art et la Médecine." Extracts from this work have been published from time to time in the "Nouvelle Iconographie de la Salpétrière," with the corresponding wealth of illustrations.

Precautions Against Cholera in Europe.—The cholera commission of Germany has been holding a special meeting at Berlin to discuss ways and means to ward off infection from the dangerous foci in Egypt and elsewhere. The Russian government has recently sent a large number of military surgeons to its eastern departments to co-operate in preventing the spread of cholera.

Foodstuffs Treated with Boric Acid Excluded from Peru.—The authorities of Peru have issued a decree forbidding the importation of foodstuffs to which boric acid has been added for a preservative. The decree was based on the testimony of the medical faculty of Lima and on the investigations of Dr. Rinehart of Kentucky, according to a communication in the *Allg. Med. Ct.-Ztg.*

New Medical Periodicals.—The publishing house of Gustav Fisher of Jena announces two new journals, the *Zeitschrift f. allg. Physiologie*, issued by Professor M. Verworn of Göttingen, and the *Archiv für Protistenkunde*, issued by Dr. F. Schaudinn of Rovigno. The price of each is 24 marks a volume. "Protistenkunde" means the science of the first forms of living matter.

Non-Conviction of a Charlatan for Fatal Practices.—The court at Flensburg recently acquitted a charlatan who had bled a pregnant woman and had thus induced fatal blood poisoning by the entire lack of aseptic precautions. His defense was that he made no charge for bleeding persons and merely did it occasionally to oblige his friends, not oftener than five or six times a year.

Fraudulent American Dental Diplomas in Germany.—The *Allg. Med. Ct.-Ztg.* states th[illegible] been instituted against 54 American [illegible] several women), now practicing in Germany, who claim to have received diplomas from the "German-American Dental College, Chicago," and the "Cosmopolitan Post-graduate Dental College." These institutions, it adds, are notorious frauds, selling their diplomas to anyone.

Deaths Abroad.—Dr. M. Skjelderup died at Christiania, Aug. 21. He was ex-professor of therapeutics and one of the founders of the local medical journal, now the *Tidsskrift f. d. Norske Laegenf.* Other deaths reported are those of Dr. von Tappeiner of Meran in his eighty-seventh year, prominent in anthropology as well as in medical research. He suggested before Koch the transmissibility of tuberculosis by inhalation.——Dr. Schlesinger of Berlin, and Dr. Pasternazki, professor of internal medicine at St. Petersburg.

Fine for a Physician in Stettin.—A physician at Stettin gave a patient an order for 1 gm. of cocain which he was to buy at the druggist's and bring the next day to the physician who was to dissolve it and inject it as a local analgesic. The patient misunderstood the directions and drank the cocain, with resulting severe intoxication, until relieved by the stomach pump. The patient sued the physician for damages, and although the latter protested that he had given most explicit directions, he was condemned to pay nearly $25, as the court decided that he had not exercised due caution in the matter.

Steffan Does Not Get Back His Fee for His Rejected Title.—The Journal mentioned at the time the circumstances connected with the refusal of Dr. Steffan, the well-known ophthalmologist of Frankfurt, to pay the customary fee of $75 when the honorary title of Sanitäte-Rath was conferred on him. He at last paid the fee, but under protest, stating that he had no wish for the title. It was later withdrawn, and he appealed to have the fee returned, especially as a recent official decree abolishes the payment of fees on the conferring of such titles, but the highest authorities have finally definitely declined to return the fee. The case has been watched with great amusement in both medical and lay circles.

Admission to the Approaching International Medical Congress.—The Paris *Semaine Medicale* observes that one does not need to be much of a prophet to foresee that the approaching International Medical Congress at Madrid is already stillborn. It is not a medical congress but a congress of physicians, druggists, dentists, veterinarians, midwives, professors of all kinds and of all branches and journalists on the lay press. The offensive regulation in regard to acceptable members has been given in full in these columns as also the amendment sent out in the last communication from the committee of organization—pages 90 and 716. The *Semaine* continues: "What physician, scientist or conscientious practitioner, seeing the dignity of the profession thus assailed, will consent to take part in such a congress? What truly high-class medical journal will open its columns to the report of such a heterogeneous collection of communications from men foreign to the profession?"

X-Ray Burn Damage Case in Germany.—The *Allg. Med. Ct.-Ztg.* gives the details of the suit brought against "Dr. Sch." by a female patient whom he treated with the Roentgen rays to destroy a beard-like growth on the chin. A burn developed in consequence involving not only the chin but the neck and part of the chest. He was condemned to damages of $75 on account of the fact that he continued the treatment after the skin showed signs of irritation by its redness. He claimed that this redness was the proper reaction to the rays, and appealed to have a truly competent expert summoned to decide the question, as for instance, Schiff or Freund from Vienna. The ordinary experts who participated in the case gave conflicting testimony as usual in this new field. He also claimed that he was not responsible for the devastation caused by the burn as it was treated by other physicians who applied ichthyol, carbolic, etc., while experience has shown that strong measures are injurious in such cases and that these *x*-ray burns should be treated with exceptional mildness.

Correspondence.

Public Health and Schools.

St. Louis, Sept. 16, 1902.

To the Editor:—Given a crowded school and a limited number of drinking cups, and we have the conditions that are sufficient to increase the danger of diseases that can be communicated from child to child, a danger which is already great from the necessary crowding together of children in schoolrooms. On the principle that prophylaxis is greater than cure, the preventive measure consists in giving each child a tin cup and in teaching him to look on it as much his own as are his school books and his slate. The cost is trifling and the safeguard great. The communion service cup has already been made the subject of suspicion as a medium and vehicle of conveying contagion. How much greater, then, is the danger to children of a common drinking cup with their extremely sensitive and responsive predisposition to external morbific influences. The eyesight of children is important, but more important the means taken to prevent their contracting diseases which either kill them or maim them in health and usefulness for after-life.

Another point that seems to invite reform is in the matter of sufficient water-closet accommodation. Children are notoriously irregular in their habits and indifferent to the calls of nature and as a rule constipation is prevalent among them. To my mind this constipation arises as much from lack of opportunity when the need arises as from the other causes that bring about the condition. Often the foundation of a lifetime of drugging and pill-taking is laid during school life.

J. R. Clemens.

Queries and Minor Notes.

THE MEDICAL COLLEGE STATISTICS FOR 1902.

Hanover, N. H., Sept. 8, 1902.

To the Editor:—Our professor of pathology has called my attention to the fact that in the summary on p. 562 of The Journal of September 6, while our laboratory facilities for work in physics, biology, chemistry and physiology are mentioned, no mention is made of laboratory facilities for work in histology, pathology and bacteriology. Doubtless in putting out such a mass of statistics some omissions are unavoidable, but the reference to certain laboratories makes the failure to name the others significant. We value our work in the laboratories not named highly. Yours truly,

William T. Smith, Dean, Dartmouth Medical College.

Note.—Our statement concerning the laboratories was prepared, submitted to the college authorities, corrected by them, returned to us and printed exactly as corrected, as the original manuscript before us shows.

Cincinnati, Ohio, Sept. 5, 1902.

To the Editor:—I would like to call your attention to the fact that there are some mistakes in the items relating to the Miami Medical College given in your issue of September 6. In giving the fee for the first year the amount should be $105, instead of $115; that for the second and third years should be $100 each, and for the fourth year, $125. The Secretary of the college is Dr. W. E. Lewis, 409 East Fifth St., and the Dean is Dr. J. C. Oliver, 628 Elm St. Yours truly, J. C. Oliver, Dean.

Note.—After a re-examination of the college catalogue for 1902-3 we would give the total fees as $115, $105, $105 and $130, for the first, second, third and fourth years respectively. Dr. Oliver errs in not noting our language: "Total fees." This term is intended to cover all the fees, including the hospital and breakage fees which he disregards. Of these two, the former is payable annually and the latter is payable once. We erred in adding the latter to each year's fees, instead of to the first year alone.

Miscellany.

Teaspoons as dose measures continue in use in spite of the fact that they vary greatly in capacity. It is not necessary to collect souvenir spoons in order to find out the great discrepancy in the size of a spoon when compared to the regulation "one fluid dram" measure. Unfortunately, some of the dose glasses are as far from the mark as any teaspoon. If physicians and pharmacists will give the subject particular attention, they can soon educate the public up to the point of using only accurately graduated medicine glasses when taking liquid remedies.—*Meyer Bros.' Druggist.*

The Metric System a Necessity.—We have pointed out, says *Meyer Bros.' Druggist*, on various occasions that the metric system would be adopted by the United States Government just as soon as our commercial relations with the world at large reached that proportion which would make the adoption of the metric system a matter of necessity. It seems that our country has about reached that point. The committee on coinage, weights and measures has decided to report favorably the Shafroth bill providing for the adoption of the metric system by the government of the United States. A lengthy argument is made in favor of the metric system, but the following paragraph shows the burden of the plea for its adoption:

> As we have only just entered upon a commercial conquest of the world, the utility of the metric system will become more and more apparent and the necessity for its adoption more urgent with each year of our growing export trade. The extension of our governmental functions to the Philippines, Cuba, and Porto Rico, brings into the circle of our commercial operations millions of people to whom the metric system is the recognized standard and to whom our own cumbersome systems of weights and measures are a strange and unknown language of trade. It seems to your committee that every argument is in favor of the unification of standards of weights and measurements throughout the world, and for us to insist upon an adherence to our own antiquated standards is not in accord with the progressive nature of our people and the progressive tendency of this age.

Membership in the County Medical Society.—A county medical society is in no sense to be compared to a social club, although certain social features properly belong to it. In a club, membership is granted or denied for personal reasons, and rightly so. . . . Membership in county medical societies, carrying with it, as it does, membership in the state medical society and giving the privilege of joining the American Medical Association, should only be denied to those who are not legally qualified to practice and to those who can be proven guilty of unprofessional conduct. There will always be in every community, medical men who are personally, for this or that reason, objectionable to some of their fellow practitioners. This is, of course, the case with all other classes of men, but no lawyer, for instance, is denied admission to the bar association of his county for purely personal reasons. In small county societies, where the individual members are brought into very close relations with each other, individual likes and dislikes are, of course, more strongly in evidence than in larger communities and some friction is inevitable, but we feel that, since very many of the prejudices and quarrels among physicians are the result of misunderstandings, the best way to promote harmony and good feeling, is to meet together occasionally for discussion of medical subjects, and for social intercourse as well, and thus get to know each other better. In this way many men have been brought to understand and to like each other who had previously been kept apart for some trivial reason which perhaps originated in an entire misunderstanding and which was readily explained away. It is never wise to be unduly sensitive and it is worse than foolish to believe all that is reported by patients, nurses or meddlesome women about either one's self or one's fellows, and it is frequently such idle and vicious tattle that is responsible for hard feeling between doctors. We believe that frequently meeting together in county medical societies will do very much to dissipate misunderstandings and to promote general professional harmony.—*St. Paul Med. Jour.*

Clippings from Lay Exchanges.

A RAPID RESURRECTION.

Evansville, Ind., April 13.—"Last night, ——, 40 years old, was brought back to life by the injection into her arm of a half-pint of salt solution. The patient was taken to a local hospital for an operation, after which the physicians discovered that her heart had ceased to beat. . . . five doctors pronounced her dead. As a last resort a vein in the right arm was opened and the salt solution injected. In three seconds the patient arose on the operating table and asked for something to eat."—*Chicago Record-Herald*, April 14, 1902.

THE ASSOCIATION SETS.

"Dr. C—— left for Omaha Tuesday to attend the State Medical Association which sets the sixth, seventh and eighth. As president of one section he is billed for a paper on gyneacology and absteterics. The Dr. takes great pleasure in such gatherings."—*Albion* (Neb.) *Argus*, May 9, 1902.

ICELANDIC CANINOPATHY.

"J—— W——, a patient at the Holy Cross Hospital, died yesterday. . . . Dr.—— finally reached the conclusion that the patient's disease was echinococcus, peculiar to Iceland, and superinduced by association with dogs."—*Salt Lake* (Utah) *Tribune*, Nov. 9, 1901.

MISSIONARIES NEEDED IN NEWPORT.

"Dr. —— of ——, Ind., died at 12:05 a. m. last Sunday, May 11, 1902, in Terre Haute, from effects of a surgical operation for fistula in ano. About nine-tenths of the surgical operations of the present day result in death."—*Newport* (Ind.) *State*, May 14, 1902.

TUBERCOLOSIS AND CONSUMPTION.

"Dr. S—— of New York has come out with a lengthy article in which he states that tight lacing causes tubercolosis and consumption. He says that with tight lacing women cannot get proper ventilation into their lungs."—*Northfield* (Minn.) *News.*

TEDIOUS DELIVERY.

"The feature of the evening was an address delivered by Dr. —— on 'Dieting Upon the So-called Dyspeptic Cases.' The address . . . engaged the rapt attention of all present during the one hour of its deliverance."—*Bel Air* (Md.) *Times,* July 20, 1901.

SUBDIVISION OF SPECIALTIES.

"Dr. —— left to-day. . . . to attend the annual meeting of the Phthalinogical and Laryngolagical Association."—*Joliet* (Ill.) *Republican,* June 15, 1902.

DID HE TAKE IT STRAIGHT?

"Dr. V—— B—— sold his shop, medicines and practice to W—— D—— and then went to Chicago to take lectures on something else."—*Barry* (Ill.) *Adage,* May 8, 1902.

HE CLINICS FOR THE ALUMNI.

"Dr. R—— is attending the clinics of the Chicago College of Dental Surgery to-day, where he clinics for the Alumni of the College. Dr. R—— is Professor of Anaesthetics in the college."—*Waukegan* (Ill.) *Gazette,* Jan. 21, 1902.

(To be continued.)

Married.

Edmund K. Perkine, M.D., to Mrs. Ida B. Prentice, both of Philadelphia, August 29.

John W. Trask, M.D., to Miss Fleta Lawrence, both of Detroit, Mich., August 23.

Walter L. Ellis, M.D., Princeton, Ind., to Miss Forum of Whitehall, Ill., August 31.

Frank R. Steelsmith, M.D., to Miss Bertha B. Tice, both of Des Moines, Iowa, September 3.

Walter S. Bebb, M.D., La Grange, Ill., to Miss Edith Wyllie of Chicago, September 10.

James Ryan Garner, M.D., to Miss Birdie Duvall Patterson, both of Atlanta, Ga., September 3.

John D. Overholzer, M.D., Milledgeville, Ill., to Miss Lizzie Garwick of Coleta, Ill., August 28.

Elmer W. Sargent, M.D., Concord, N. H., to Miss Martha E. Rolfe of Penacook, N. H., September 3.

William Preston Delapierre, M.D., Hoschton, Ga., to Miss Ruby Camp of Atlanta, Ga., September 3.

William Myron Weaver, M.D., Hartford, Conn., to Miss Julia Frances Bartlett of New York City, August 25.

Gould Shelton Higgins, M.D., Wethersfield, Conn., to Miss Marie Cunningham Bacon of Scotland, Conn., September 3.

Deaths and Obituaries.

William B. Wynne, M.D. University of Vermont, Burlington, 1857, who served through the Civil war as assistant surgeon of the Fifty-third Pennsylvania Infantry, was then transferred to the First Division, Second Corps, Army of the Potomac, promoted to surgeon of the Fourteenth Pennsylvania Infantry, and then made surgeon-in-chief of the Middle Military Division, and on the staff of General Custer, and who, after his discharge in 1865, practiced in the oil regions of Pennsylvania, and for the last 18 years in Phenixville, died at the Phenixville Hospital, August 16, after an illness of a year, aged 70.

Clayton M. Daniels, M.D. University of Buffalo, 1880, one of the most prominent physicians of Buffalo, for 17 years surgeon of the Sisters' and Emergency hospitals, for four years professor of anatomy at the Niagara University, and attending surgeon for several railways, died at his home, September 6, from blood poisoning after an illness of nine months, aged 48. He was one of the founders and an ardent advocate of the Emergency Hospital, of which he was chief surgeon at the time of his death.

Monroe T. Pultz, M.D. College of Physicians and Surgeons, New York, 1868, a prominent physician of Dutchess County, N. Y.; vice-president of the Dutchess County and Medical Association and a member of the New York State Medical Association and the American Medical Association, committed suicide at his home in Stanfordville by shooting himself through the head, while despondent over the death of his wife; he was 59 years old.

Claudius B. Webster, M.D. College of Physicians and Surgeons, New York, 1844, the oldest alumnus of Dartmouth College, United States Consul at Sheffield, Eng., for the longest consecutive term on record—sixteen years—and a surgeon during the Civil war, died at the residence of his nephew in Concord, N. H., September 8, aged 86.

Joseph Garland, M.D. Medical School of Maine, Brunswick, 1844; Jefferson Medical College, 1847, the oldest physician on Cape Ann, for more than half a century a practitioner of Gloucester, Mass., and some-time mayor of that city, died at his residence, September 4, from paralysis after an illness of three weeks, aged 80.

Reuben M. Sutphen, M.D. New York University, 1847, a practitioner of Newark, N. J., for more than 35 years, and a member of the Newark Medical Association, the Essex District Medical Society and the Medical Society of New Jersey, died at the home of his son, in Old Short Hills, N. J., September 2, aged 83.

William O. Xander, M.D. University of Pennsylvania, Philadelphia, 1895, a promising young physician of Philadelphia, was thrown from his carriage, accidentally, September 5, sustained a fracture of the skull and died at the Methodist Hospital, September 7, aged 35.

Henry P. Shattuck, M.D. Harvard University Medical School, Boston, 1866, who served as an assistant surgeon in the Civil war and was a member of the Massachusetts House of Representatives in 1873-1874, died at his home in Brooklyn, N. Y., September 6, aged 58.

Michael Bradley, M.D., U. S. Navy, retired, an assistant surgeon in the navy in the Civil war, in 1879 commissioned a medical inspector, and from 1888 to 1895 medical director of League Island Navy Yard, died at his home in Philadelphia, August 27, aged 65.

Ignatius G. Drury, M.D. University of Louisville (Ky.) 1862, was found dead in bed, from heart disease, at his home in Knottsville, Ky., September 4, aged 75. He was a member of the State, District, and Daviess County medical societies.

Christian C. Baumgartner, M.D., who graduated in medicine in 1861, but forsook that field for the pulpit after fourteen years and then returned to practice, died at his home in Elkhart, Ind., from heart disease, September 4, aged 60.

William R. Taylor, M.D. Medical College of Ohio, Cincinnati, 1889, a physician of Clark's Hill, Ind., died at St. Elizabeth's Hospital, Lafayette, Ind., from typhoid fever, August 26, after an illness of four weeks, aged 57.

George T. Scarburgh, M.D. Jefferson Medical College, Philadelphia, 1858, an old physician of Accomac Courthouse, Eastern Shore, Va., died September 3, aged 66. He was an assistant surgeon in the Confederate service.

Julia M. Patten, M.D. Northwestern University Woman's Medical School, 1880, who had practiced for fifteen years at Holyoke, Mass., died suddenly September 8, from heart disease while driving near Somers, Conn., aged 43.

George S. Graham, M.D. Jefferson Medical College, Philadelphia, formerly a practitioner of Florence, Pa., and in 1885 and 1886 a member of the state legislature, died at his home in Burgettstown, September 10, aged 62.

Azel Backus, M.D. University of Pennsylvania, Philadelphia, the oldest physician in Rochester, N. Y., who during the Civil war was provost-marshal's surgeon for the Army, died at his home, September 2, aged 75.

William J. Wentz, M.D. Jefferson Medical College, Philadelphia, 1865, died at his home in New Providence, Pa., September 5, from kidney disease, aged 64. He was a member of the American Medical Association.

Josiah G. Graves, M.D. College of Physicians and Surgeons, New York, 1857, an old practitioner of Nashua, N. H., died at his summer home, Marblehead Neck, Mass., after a long illness, August 28, aged 70.

Hollie P. Robertson, M.D. Toledo (Ohio) Medical College, 1900, accidentally shot himself while superintending the construction of his new residence at Almond, N. C., and died September 6, aged 24.

Isaac W. Church, M.D. University of Wooster, Cleveland, Ohio, 1871, *formerly* a practitioner of Locke Town and Nappanee, Ind., died at the home of his sister in Middlebury, Ind., August 25, aged 61.

John J. Schlawig, Jr., M.D. College of Physicians and Surgeons, Chicago, 1891, died at his office in Sioux City, September 8, from the effects of an overdose of chloroform, aged 35.

John B. Kearney, M.D. Bellevue Hospital Medical College, New York, 1881, died suddenly from heart disease, at his home in Oregon, Mo., September 5, aged 46.

Nelson Price, M.D., St. John, N. B., who went to South Africa with the hospital corps of the Canadian Mounted Rifles, has died from enteric fever, aged 28.

Eugene E. Storck, M.D. University of Buffalo, 1878, died at his home in Buffalo, from consumption, September 10, after an illness of seven months, aged 47.

William Lapsley, M.D. Toronto (Ont.) School of Medicine, a well-known Canadian physician, died at Wesley Hospital, Chicago, September 4, aged 69.

Caswell T. Poe, M.D. Cincinnati University, 1849, died at his home in Grand Island, Neb., September 8, after an illness of eight days, aged 72.

Robert B. Benham, M.D. Jefferson Medical College, Philadelphia, 1876, died suddenly from heart disease in Mabton, Wash., September 2.

James G. De LaFonte, M.D. Queen's College, London, Eng., 1856, died at his home in Springfield, Mo., September 5, from paralysis, aged 70.

John H. Gardiner, M.D. Rush Medical College, Chicago, 1872, died at his home in Mahomet, Ill., August 29, from paralysis.

James G. Allen, M.D. Arkansas University, Little Rock, 1891, died at his home in Bratford, Ark., September 2, aged 80.

Thomas Hickey, M.D. Jefferson Medical College, Philadelphia, 1894, died at Shamokin, Pa., August 6, from tuberculosis.

John C. McKinnon, M.D. Harvard University, Boston, 1870, died recently at his home in Antigonish, N. S., aged 54.

George Waters, M.D. Toronto (Ont.) University, 1868, died at his home in Coburg, Ont., August 3, aged 65.

John H. Harris, M.D. Bellevue Hospital Medical College, 1866, died at his home in Yarmouth, N. S., June 15.

Calvin T. Dripps, M.D. Rush Medical College, Chicago, 1880, died at his home in Staunton, Ill., August 27.

State Boards of Registration.

Texas Announcement.—The next regular examination by the Texas Board of Examiners will be in Dallas, October 7 to 10. Further information may be had of the secretary, Dr. M. M. Smith, Austin.

Virginia Examination.—Dr. R. S. Martin of Stuart, secretary of the Medical Examining Board of Virginia, reports the examination held at Richmond, June 16-19, as follows: Number of subjects, 9; total questions, 69, of which 60 were to be answered; percentage required to pass, 75; examination partly oral and partly written; number examined, 170; passed, 63; failed, 18; partial examination, 89:

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
J. B. A.	R.	Medical College of Virginia	1901	75
A. S. B.	R.	Medical College of Virginia	1902	85
W. M. F.	R.	Medical College of Virginia	1902	80
J. M. G.	R.	Medical College of Virginia	1902	79
T. E. R.	R.	Medical College of Virginia	1902	77
W. M. S.	R.	Medical College of Virginia	1902	78
E. —. S.	R.	Medical College of Virginia	1902	75
R. S. T.	R.	Medical College of Virginia	1902	77
M. M. A.	R.	University of the South	1901	81
L. C. D.	R.	University of the South	1901	75
A. S. E.	R.	University of the South	1901	85
J. D. H.	R.	University of the South	1902	80
E. E. M.	R.	University of the South	1902	79
W. G. N.	R.	University of the South	1902	75
N. I. A.	R.	University College of Medicine	1902	75
H. R. C.	R.	University College of Medicine	1897	82
F. L. C.	R.	University College of Medicine	1902	77
J. D. F.	R.	University College of Medicine	1902	76
T. A. P.	R.	University College of Medicine	1899	85
J. L. D.	R.	University College of Medicine	1901	76
J. J. L.	R.	University College of Medicine	1901	78
G. L. M.	R.	University College of Medicine	1902	79
H. L. P.	R.	University College of Medicine	1902	80
R. W. Q.	R.	University College of Medicine	1901	78
H. W. R.	R.	University College of Medicine	1902	82
R. T. S.	R.	University College of Medicine	1902	85
J. D. B.	R.	University of Virginia	1902	84
R. O. L.	R.	University of Maryland	1902	76
J. B. M.	R.	University of Virginia	1901	80
O. H. M.	R.	University of Virginia	1901	81
W. A. P.	R.	University of Virginia	1900	82
H. H. T.	R.	University of Virginia	1902	76
W. H. W.	R.	University of Virginia	1900	86
T. H. W.	R.	University of Virginia	1902	76
A. J. B.	R.	Baltimore University	1902	75
V. —. D.	R.	University of Virginia	1902	78
R. E. B.	R.	University of Maryland	1902	75
E. J. N.	R.	University of Maryland	1889	*
H. W. W.	R.	University of Maryland	1902	82
C. S. B.	R.	University of New York	1889	75
P. A. S.	R.	Howard University	1901	78
C. H. S.	R.	Howard University	1901	82
W. D. B.	R.	Coll. of Phys. and Surgs., Baltimore	1893	*
G. K. C.	R.	Coll. of Phys. and Surgs., Baltimore	1900	*
B. S. P.	R.	College of Phys. and Surgs., Baltimore	1902	79
W. M. E.	R.	College of Phys. and Surgs., New York	1890	*
A. —. G.	?	Shaw University	1902	76
R. A. G.	R.	Coll. of Phys. and Surgs., St. Louis	1896	75
J. M. G.	R.	Maryland Medical College	1902	79
D. J. W.	R.	Maryland Medical College	1902	80
E. M. H.	R.	Coll. of Phys. and Surgs., Atlanta	1902	83
M. F. J.	R.	Woman's Medical College, Baltimore	1897	83
D. J. K.	R.	Buffalo University, N. Y.	1900	80
G. V. L.	R.	Johns Hopkins University	1902	79
H. C. M.	R.	College of Phys. and Surgs., Atlanta	1902	82
E. P. M.	R.	Long Island Medical College	1889	84
J. T. M.	R.	University of Georgia	1900	77
L. —. N.	R.	Medical College of Ohio	1890	78
J. A. B.	R.	University of Texas	1898	84
R. S. C.	R.	Baltimore Medical College	1902	78
C. E. S.	R.	Baltimore Medical College	1902	80
J. B. W.	R.	Louisville Medical College	1901	75
C. E. W.	R.	Leonard Medical College	1901	75

FAILED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
4	R.	Medical College of Virginia	1902	72
6	R.	University College of Medicine	1901	72
95	R.	University College of Medicine	1902	71
10	R.	Baltimore Medical College	1901	56
72	R.	Baltimore Medical College	1901	63
13	R.	Leonard Medical College	1902	66
18	R.	Leonard Medical College	1902	67
19	R.	Leonard Medical College	1902	71
73	R.	Leonard Medical College	1902	70
76	R.	Leonard Medical College	1902	72
43	R.	College of Phys. and Surgs., Atlanta	1902	64
75	R.	Howard Medical College	1882	24
78	R.	University of Virginia	1901	71
127	R.	Medical College of South Carolina	1901	72
136	R.	University of the South	1901	61
156	R.	University of the South	1900	72
140	R.	Baltimore University	1900	59
158	R.	University of Louisville	1889	68

* Oral examination.

Michigan Report.—Dr. B. D. Harison, of Sault Ste. Marie, secretary of the Michigan Board of Registration in Medicine, reports the examination held at Lansing, June 10-13, as follows: Number of subjects, 19; number of questions, 190; percentage required to pass, 75; written examination; number examined, 22; passed, 13; failed, 9.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
1	R.	Cincinnati Coll. of Med. and Surg.	1902	76.15
2	R.	Denver University	1896	87.47
3	R.	Trinity Medical College, Toronto	1902	85.36
4	R.	Trinity Medical College, Toronto	1902	79.57
7	R.	Trinity Medical College, Toronto	1902	81.21
9	R.	Trinity Medical College, Toronto	1900	75.26
10	R.	Trinity Medical College, Toronto	1900	77.21
13	R.	Trinity Medical College, Toronto	1896	79.52
5	R.	College of P. and S., Milwaukee	1896	85.52
6	R.	Queen's College, Kingston, Ont.	1901	89.47
12	R.	Queen's University, Kingston, Ont.	1902	78.10
8	R.	Undergraduate		83.05
11	R.	University of Kristiana, Norway	1894	80.31

FAILED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
15	R.	Memphis Hospital Medical College	1901	58.42
16	R.	Iowa College of Phys. and Surgs.	1898	40.15
18	R.	Cincinnati College of Med. and Surg.	1902	72.73
17	R.	Undergraduate		73.26
14	R.	Undergraduate	1897	66.78
19	R.	Undergraduate		69.68
20	R.	Undergraduate		62.05
21	R.	Undergraduate		60.15
22	R.	Toledo Medical College, Ohio	1901	69.63

The Maine Examination.—Dr. A. K. P. Meserve, secretary of the Board of Registration of Medicine of Maine, reports the examination held at Portland, July 11 and 12, 1902, as follows: Number of subjects, 7; total questions, 70; percentage required to pass, average 75 and not less than 60 in any one branch.

The examination was partly oral and partly written. The total number examined was 33; passed, 31; failed, 2.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
481	R.	Medical School of Maine	1899	91.3
487	R.	Medical School of Maine	1902	88.6
470	R.	Dartmouth Medical School	1901	82.5
489	R.	Dartmouth Medical School	1902	86.2
473	R.	University of Vermont	1902	88
477	R.	University of Vermont	1902	90 2-7
476	R.	Harvard Medical School	1902	88 6-7
482	R.	Harvard Medical School	1900	88
495	R.	Harvard Medical School	1902	84 5-7
471	R.	Tufts College Medical School	1902	83
491	R.	Tufts College Medical School	1902	82.6
478	H.	Boston University School of Med	1902	84 4-7
479	H.	Boston University School of Med	1899	89.8
490	R.	Coll. of Phys. and Surgs., Boston	1901	82
497	R.	Coll. of Phys. and Surgs., Boston	1902	78 5-7
475	R.	Coll. of Phys. and Surgs., N. Y.	1898	89 1-7
492	R.	Coll. of Phys. and Surgs., N. Y.	1901	91 1-7
499	R.	Coll. of Phys. and Surgs., N. Y.	1902	91
468	R.	University of Pennsylvania	1902	91
485	R.	University of Pennsylvania	1902	86.6
493	R.	University of Pennsylvania	1901	92
496	R.	Jefferson Medical College, Phila	1902	93
472	R.	Baltimore Medical College	1902	87 2-7
486	R.	Coll. of P. and S., Baltimore	1902	82.6
498	R.	Coll. of P. and S., Baltimore	1902	85.9
488	H.	Hahnemann Med. Coll., Phila	1902	88 3-7
500	R.	Northwestern University, Chicago	1892	*75 2-7
474	R.	Columbian Med. School, Wash	1901	93 5-7
480	R.	Laval University, Montreal	1902	80
483	R.	University of Michigan	1887	82 1-7
484	R.	University of Michigan	1884	82 3-7
		RECIPROCAL REGISTRATION.		
..	R.	Coll. of Phys. and Surgs., N. Y.	1889	†
		FAILED.		
469	H.	Hahnemann Med. Coll., Chicago	1889	72.3
494	R.	Dartmouth Medical College	1891	58 2-7

* Third examination.

† Registered by reciprocity with New Jersey.

Association News.

Saratoga Meeting of the Secretaries of State Medical Societies.

In response to a call issued by Dr. Geo. H. Simmons, Secretary of the American Medical Association, the secretaries of the various state societies met in the United States Hotel, Saratoga Springs, N. Y., June 10, 1902. The meeting was called to order by Dr. Geo. H. Simmons. Dr. H. A. West of Texas was elected chairman and Dr. J. L. Stewart of South Dakota was elected secretary. Dr. Foshay of Ohio made a few remarks on the object of the meeting. Dr. West spoke of the importance of the meeting and the advantages which secretaries could obtain by interchange of ideas.

Dr. J. N. McCormack, of the Committee on Organization, was invited to attend and address the meeting. He spoke of having an organization of state presidents and also a permanent organization of state secretaries. He spoke of having a national organizer who should visit state society meetings, and also visit physicians personally or call meetings by counties and induce them to come into state and national societies.

Dr. Geo. H. Gorham of Vermont spoke of organization in his state and favored a national organizer. Dr. Stewart favored a national organizer and thought one could do a great deal of good in South Dakota. Dr. Monte Griffith said that the District of Columbia was well organized and did not need the help of an organizer. Dr. Runyon of Arkansas spoke in favor of a national organizer and thought that such a man, with the aid of the new plan of organization of the American Medical Association, would bring all good men into line. Dr. McCormack thought that Pennsylvania was all right, but Dr. Stevens said that there was room for improvement and that an organizer could do good there as well as in other states.

Dr. McCormack spoke of personal work among physicians. He said that the physician should be the model man of his community and above all petty quarrels. That he should also be the cleanest man personally, morally and socially in the entire community. He said that if we want people to look up to us we must be the kind of men that they can look up to.

The meeting adjourned to meet at 8:45 a. m., Wednesday, June 11, 1902.

JUNE 11, 1902, 9:30 A. M.

The meeting was called to order, with Dr. West in the Chair. Dr. Murrey, of Key West, Fla., was admitted, as he represented the secretary from his state.

The following resolutions were passed:

Resolved, That, after careful consideration, we endorse the plan of organization recommended by the Committee on Organization of the American Medical Association, and that we strongly advise all the states that have not already adopted said plan to take measures to do so at their next regular meeting, with such modifications as circumstances may require.

Resolved, That the secretaries of the state medical societies in convention assembled do hereby express our high appreciation of the address of Dr. J. N. McCormack of Kentucky, which demonstrated to us the great benefits of a more perfect organization and the possibility of perfecting the same in every state in the Union, and that we pledge ourselves to use our best efforts to promote organization in every way within our power.

The meeting adjourned to meet at the next annual meeting of the American Medical Association, time and place to be selected by the secretary of the American Medical Association.

J. L. Stewart, Secretary.

Societies.

COMING MEETINGS.

Medical Society of Virginia, Newport News, Sept. 23-25, 1902.

American Academy of Railway Surgeons, Kansas City, Mo., Oct. 2-3, 1902.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Birmingham, Ala., Oct. 7-9, 1902.

Medical Association of District of Columbia, Washington, Oct. 7, 1902.

Idaho State Medical Society, Moscow, Oct. 9-10, 1902.

Vermont State Medical Society, Burlington, Oct. 9-10, 1902.

Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

Military Tract Medical Society.—The annual meeting of this society will be held in Monmouth, Ill., October 16 and 17.

American Electro-Therapeutic Association.—This association, at its twelfth annual convention held at Kaaterskill, N. Y., September 4, elected Dr. Daniel R. Brower of Chicago president.

Louisville (Ky.) Society of Medicine.—The annual election of this society was held September 2, with the following result: President, Dr. William H. Coleman; vice-president, Dr. Sidney J. Meyers, and treasurer, Dr. H. Davidson.

Wayne County (Mich.) Medical Society.—The first meeting of this society since the amalgamation was held September 4 at the Hotel Normandie, Detroit. Dr. Emil Amberg read a paper on "Surgical Anatomy of the Middle Ear as a Factor for Early Interference in Tympanomastoiditis."

Henry County (Ky.) Medical Society.—This society held its annual meeting at New Castle, August 28. Dr. W. T. Coblin, Campbellsburg, was elected president; Dr. Pink H. Crutchfield, Bethlehem, vice-president; Dr. John C. Cassity, Eminence, treasurer, and Dr. Albert P. Dowden, Eminence, secretary.

Wexford County (Mich.) Medical Association.—The physicians of Wexford County met at Cadillac, September 4, and organized a county medical association, with the following officers: President, Dr. Bartlett H. McMullen, Cadillac; vice-president, Dr. Walter B. Wallace, Manton, and secretary-treasurer, Dr. G. DeVere Miller, Cadillac.

Richland County (Ohio) Medical Society.—A meeting of the physicians of Richland County was held at Mansfield, September 5, to organize a county society. The constitution and by-laws as drafted by the American Medical Association were adopted. Dr. Josiah S. Hedges was elected president; Dr. William E. Loughbridge, vice-president; Dr. John M. Burns, secretary, and Dr. Maxwell J. Davis, treasurer, all of Mansfield.

Boulder County (Colo.) Medical Society.—At a regular meeting of this society, held September 4, the constitution and by-laws made to conform to the requirements of the American Medical Association were adopted. The reorganization plan from county to national body is heartily approved by the society. The following officers were elected: President, Dr. Emley B. Queal, Boulder; vice-president, Dr. Edward B. Trovillion, Gold Hill; secretary, Dr. William J. Baird, Boulder, and treasurer, Dr. W. W. Reed, Boulder.

German Congress of Anthropology.—The thirty-third session of the Congress was held at Dortmund August 5, with 250 members in attendance, but for the first time without Virchow, the founder of the Anthropological Society. Ranke of Munich reviewed the work of Marchand on the weight of the human brain, as the most important recent research in the line of anthropology. It is based on weights of 1834 brains, and

Thiol is a basic di-thio-salicylate of bismuth; a hydrocarbon obtained in a similar manner to ichthyol. It may be applied to ulcers and burns in the form of an ointment as follows:

℞.	Thiol		
	Vaselini albi, āā	ʒi	4
	Lanolini	℥i	30

M. Ft. unguentum. Sig.: Apply locally once daily. And as a dusting powder it may be combined as follows:

℞.	Thiol	ʒii	8
	Zinci oxidi	ʒiii	12
	Amyli	℥i	30
	Pulv. talci	℥ii	60

M. Sig.: Apply locally as a dusting powder once a day and cover with absorbent cotton.

Lead carbonate is frequently used as a coating for burns or ulcers. It may be applied in the form of an ointment or mixed with olive oil or linseed oil. Care should be observed in applying this preparation to a large surface, otherwise lead poisoning may be produced by absorption. The following combination is sometimes used:

℞.	Plumbi carb.	ʒi	4
	Pulv. amyli	ʒi	4
	Ung. aq. rosæ	℥i	30
	Olei olivæ	ʒii	8

M. Sig.: Apply locally to the affected part.

Potassium permanganate is of great value in the treatment of chronic ulcers employed as follows:

℞.	Pot. permanganatis	gr. xx-lx	1.30-4
	Aq. destil.	Oi	480

M. Sig.: To be used as a wash.

It may be used in the same manner in a saturated solution, first swabbing out the slough and flooding the ulcer for ten minutes. In this strength severe pain is produced for a few minutes. The ulcer should then be dried and packed with gauze soaked in the fluid. A heavy piece of gauze soaked in the same solution may be applied over the ulcer, covered with oil silk and the bandage applied. This dressing should be changed every day.

Acetanilid may be used to an advantage in the treatment of obstinate and irritable ulcers. It may be applied in the form of an ointment as follows:

℞.	Acetanilidi	gr. xx	1|30
	Vaselini albi	℥i	30

M. Sig.: To be applied locally.

Aristol has been frequently used as a dressing. It contains about 40 per cent. of iodin and is made by adding a solution of iodin in potassium iodid to an aqueous solution of sodium hydrate containing thymol, when aristol is thrown down as a reddish-brown precipitate. According to Shoemaker aristol is remarkably efficacious in promoting rapid cicatrization. Varicose ulcers of the leg, which are of such common occurrence in old people, heal very rapidly under the application of the following:

℞.	Aristol	gr. xv-ʒss	1-2
	Vaselini	℥i	30

M. Sig.: To be applied locally.

It has also been recommended in the treatment of fissured nipples applied in the form of an ointment in strength of 15 to 20 per cent.

As an application on erethistic ulcers where a great deal of pain accompanies the ulcer orthoform is of great service as a local anodyne in combination as follows:

℞.	Orthoformi	ʒiss	6
	Ichthyol	ʒiiss	10
	Vaselini	℥ii	60

M. Sig.: Apply locally.

Unna's paste is probably one of the most efficient dressings in the treatment of eczematous and varicose ulcers of the legs. The formula is as follows:

℞.	Zinci oxidi	ʒii	60
	Glycerini	℥v	150
	Gelatin	℥ii	60
	Aquæ	℥v	150

M. Ft. unguentum. Sig.: Paint well over the ulcer and apply a thin layer of gauze over which a second layer of the ointment is painted and a bandage applied.

The foregoing paste should be properly made by dissolving the gelatin in the water gently heated. The zinc oxid should be rubbed up with the glycerin and the gelatin solution added by stirring.

The following powder is of service when a dry dressing is indicated:

℞.	Iodol	ʒv	20
	Bismuthi subiodidi	ʒi	4

M. Sig.: To be dusted on the ulcer once daily and dressed with absorbent cotton.

The following combination containing gelatin and ichthyol may be used similarly to Unna's dressing:

℞.	Ichthyol	ʒiss	6
	Gelatin	ʒiii	12
	Zinci oxidi	ʒi	4
	Glycerini	ʒiii	12
	Aq. destil.	ʒvi	24

M. Dissolve the gelatin in the water gently warmed and add the ichthyol and zinc oxid, which have been previously mixed with the glycerin. Sig.: Thoroughly cleanse the ulcer and paint it over with this solution previously warmed.

Medicolegal.

SOME LEGISLATION OF THE YEAR 1902.

Iowa—May Employ Own Physician During Quarantine.—Chapter 105 of the Laws of Iowa of 1902, superseding Section 2570 of the Code, and relating to quarantine and the expenses thereof, provides, among other things, that nothing therein contained shall be construed to prevent any person quarantined, as therein provided, from employing at his own expense the physician or nurse of his choice, and no part of the expense of the physician or nurse employed by the Board of Health shall be apportioned to him under the provisions of this Act.

Iowa—Itinerant Physician.—Chapter 109 of the Laws of Iowa of 1902 amends Section 2581 of the Code by inserting the words "by himself, agent or employe," making the same read: Every physician practicing medicine, surgery or obstetrics, or professing to treat, cure or heal diseases, ailments or injuries by any medicine, appliance or method, who "by himself, agent or employe" goes from place to place, or from house to house, or by circulars, letters or advertisements solicits persons to meet him for professional treatment at places other than his office at the place of his residence, shall be considered an itinerant physician, etc., which requires a special license.

Iowa—Location of Pest-Houses.—Chapter 108 of the Laws of Iowa of 1902, relative to the erection and maintenance of pest-houses and hospitals, provides that when a controversy arises between municipalities or between boards of health thereof, respecting the location of pest-houses or hospitals for the treatment of infectious or contagious diseases, such matter shall be referred to the president of the State Board of Health, who shall forthwith appoint a committee of three members thereof, which committee shall upon two days' notice to the parties interested, investigate the matter and make such order in the premises as the facts warrant, and such order shall be final. The health officers of the municipality which is allowed to maintain a pest-house or hospital for patients affected by infectious or contagious diseases outside the limits of said municipality, shall have exclusive jurisdiction and control of such pest-house or hospital for the enforcement of all sanitary and health regulations.

Iowa—Sale of Cocain.—Chapter 110 of the Laws of Iowa of 1902 provides, under penalty, that no one, by himself, clerk, employe or agent, shall either directly or indirectly, sell or give away any cocain, or preparation containing cocain, except on the written prescription of a registered physician for medical purposes. And no such prescription shall be refilled except on the written order of a physician. However, nothing in this Act shall be construed to prevent the sale thereof to a wholesale or retail dealer in drugs nor registered physician, or licensed dentist for use in the practice of his profession. Peace officers shall see that the provisions of this Act are faithfully executed within their respective jurisdictions, and when they are informed, or have reason to believe that this Act has been violated, and the proof thereof can be had, they shall file information to that effect against the offending party before a magistrate, who thereupon shall proceed according to law. The county attorney shall prosecute violators of this Act.

Iowa—Enforcement of Rules of State Board of Health.—Section 2572 of the Iowa Code providing that local boards of health shall obey and enforce the rules and regulations of the state board, and peace and police officers within their respective jurisdictions, when called on to do so by local boards, shall execute the orders of such board, is amended, by Chapter 107 of the Laws of Iowa of 1902, by adding thereto the following: If any local board of health shall refuse or neglect to enforce the rules and regulations of the State Board of Health, the State Board of Health may enforce its rules and regulations within the territorial jurisdiction of such local board, and for that purpose shall have and may exercise all of the powers given by statute to local boards of health; and the peace and police officers of the state, when called on by the State Board of Health to enforce its rules and regulations, shall execute the orders of such board. All expenses incurred by the State Board of Health in determining whether its rules and regulations are enforced by a local board of health, and in enforcing the same when a local board has refused or neglected to do so, shall be paid in the same manner as is now provided for the payment of the expenses of enforcing such rules and regulations by local boards of health.

Maryland—Tuberculosis Commission.—Chapter 451 of the Laws of Maryland of 1902 authorizes the governor of the state to appoint a commission, to be known as the "Tuberculosis Commission," to consist of five persons, three of whom shall be physicians, whose duty it shall be to investigate the prevalence, distribution and causes of human tuberculosis in the state, and to determine its relations to the public health and welfare, and to devise ways and means for restricting and controlling said disease. The members of the commission shall serve without pay, except expenses actually incurred, and shall continue in office for a term of two years from the date of their appointment. They shall report the results of their investigations not later than Jan. 1, 1904. All hospitals, dispensaries and other institutions having medical officers, and supported in whole or in part by public funds of the state of Maryland, or of any city or county in the state, shall cause to be made on blanks furnished by the tuberculosis commission, records of such facts as may be available, for the use and purposes of said commission, concerning every case of tuberculosis coming under the care of such institution. The records so obtained shall be and remain the property of the institution where they are made; provided only, that the tuberculosis commission shall have free access to and use of such records during the period for which this Act shall remain operative.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record (N. Y.), September 6.

1 *Organacidia Gastrica. M. I. Knapp.
2 Aestivo-Autumnal Fever in Manhattan Island and Its Environs. H. S. Patterson.
3 *Why Is Modern School Life So Often Disastrous to the Scholars, Especially to Girls? R. C. Newton.
4 *Prostatic Gonococcal Auto-Reinfections of the Urethra. T. M. Townsend.
5 The Effect of Ferric Perchlorid in Large Doses in Erysipelas and Similar Inflammatory Diseases. J. G. Drennan.
6 *Vaginal Operations for Retroversions and Retroflexions of the Uterus, with a Critical Review of Fifty-seven Cases of Vaginal Suturing of the Round Ligaments (the Author's Operation). H. N. Vineberg.

Philadelphia Medical Journal, September 6.

7 *The Climate of Porto Rico. T. L. Coley.
8 *The Diagnosis and Treatment of Tubercular Cystitis. J. B. Bissell.
9 *Indications for, and Technic of, Operations for Nephroptosis. A. H. Goelet.
10 *The Treatment of Uremia (Mixed Toxemia). E. H. Grandin.
11 A Note on Some Psychoses of Early Puberty, with Report of a Case in a Boy, Twelve Years Old. Alfred Gordon.
12 Infantile Cerebral Paralysis. E. J. Huhner.

Medical News (N. Y.), September 6.

13 The Healing of Ulcerative Endocarditis. J. B. Herrick.
14 *Characteristics of Pulmonary Valve Affections, with Cases. T. E. Satterthwaite.
15 *A Brief Consideration of the Scientific Treatment of a Few of the Diseases of the Heart. I. N. Snively.
16 The Pathology and Treatment of Endo- and Peri-carditis. W. H. Porter.
17 *Some Notes on Tricuspid Diseases. T. E. Satterthwaite.
18 Embolism of the Mesenteric Artery. A. Lambert and W. B. Coley.

St. Louis Medical Review, September 6.

19 *Nasal Obstruction as a Cause of Laryngitis, and Operative Procedures for Its Relief. W. B. Shields.
20 Gynecologic Gymnastics. M. E. Fitch.

Boston Medical and Surgical Journal, September 4.

21 *The Shattuck Lecture. The Changes in the Spinal Cord and Medulla in Pernicious Anemia. F. Billings.
22 Legislation with Reference to Smallpox and Vaccination. S. W. Abbott.
23 Vaccination Eruptions. H. P. Towle.
24 Appendicitis Complicating Pregnancy, with Report of Case; Removal of Gangrenous Appendix at Three and One-Half Months, Delivery at Term. F. D. Donoghue.

American Medicine (Philadelphia), September 6.

25 Surgical Features of Typhoid Fever. T. McCrae and J. F. Mitchell.
26 A Frame for the Application of Plaster-of-Paris Jackets in Pott's Disease. R. W. Lovett.
27 *The New Antiserum Method of Differentiating Human from Other Blood, and Its Medicolegal Aspect: Preliminary Report of Experiments. A. J. Patek and William C. Bennett.
28 Rupture of Heart. R. L. Leak.
29 *Perforation in Typhoid Fever, with Report of Seven Operative Cases. George L. Hays.
30 Atresia of the Vagina (Colpatresia), Unilateral Ovary and Tube, with no Uterus. C. E. Barnett.

New York Medical Journal, September 6.

31 A Contribution to the Differential Diagnosis of Appendicitis. E. Staehlin.
32 *A Résumé of Forty-eight Cases of Postoperative Crural Thrombosis. B. R. Schenck.
33 Clinical Contribution to the Study of Empyema of the Frontal and Ethmoidal Sinuses Complicated by Eye Disease. M. Toeplitz.
34 *The Age of Consent. I. Dyer.
35 *The Use of Electricity in the Treatment of Habitual Constipation. S. Cohn.
36 New Mexico as a Health Resort. H. B. Masten.
37 Clinical Notes on Cardiac Diseases. S. S. Cornell.

New Orleans Medical and Surgical Journal, September.

38 Spinal Analgesia. Wm. M. Perkins.
39-40 *Sigmoidopexy for the Relief of Prolapse of the Rectum, with Reference to Spinal Analgesia; Report of Case, and Review of Literature. A Jacoby.
41 Report of a Case of Resection of Five Inches of Tibia in a Railroad Injury, with Complete Reformation of Bone Tissue. E. Denègre Martin.
42 Acetanilid Cyanosis. E. A. Kleinpeter.

American Journal of the Medical Sciences (Philadelphia), September.

43 *Some Experimental and Clinical Observations Concerning States of Increased Intracranial Tension. Harvey Cushing.
44 *A Report of Ninety-Two Cases of Thermic Fever Treated at the Pennsylvania Hospital in the Summer of 1901. Morri. J. Lewis and Frederick A. Packard.
45 Chronic Empyema of the Frontal, Ethmoidal, and Both Sphenoidal Sinuses, with Extensive Necrosis, Complicated with Adenoma of the Posterior Ethmoidal and Sphenoidal Regions. Joseph H. Bryan.
46 Traumatic Rupture of Choroid, with Hemorrhage from Upper Branch of the Inferior Temporal Vein. Charles A. Oliver
47 Reports of Three Cases of Creeping Larvæ in the Human Skin (Hyponomoderma, Kaposi). Arthur Van Harlingen.
48 *Benign Cystic Epithelioma; Report of Two Cases Presenting Unusual Features. M. B. Hartzell.
49 *Postoperative Non-Septic Leucocytosis and Other Blood Conditions. Herbert M. King.
50 *Entrance of Air into the Veins, and Its Treatment. Malcolm Goodridge.
51 A Case of Subpectoral Abscess. Gwilym G. Davis.
52 Anomalous Position of the Common Carotid, Visible in the Pharynx. George B. Wood.
53 *The Treatment of Pneumonia. Reynold W. Wilcox.
54 A Review of the Study and Treatment of Heatstroke at the Pennsylvania Hospital and Elsewhere, 1751-1870. Joseph M. Spellissy.

Cleveland Medical Journal, August.

55 Malpractice. Smith W. Bennett.
56 Six Cases of Right Hemiplegia, with Aphasia. George A. Collamore.
57 Injury to the Eye with Steel in the Orbit. William E. Bruner.

58 A Case of Acute Tuberculosis of the Peritoneum. Dudley P. Allen.
59 When to Use the Forceps. Frank S. Clark.

Southern Practitioner (Nashville, Tenn.), September.

60 *Facts vs. Fallacies in the Practice of Rectal Diseases. A. B. Cooke.
61 Treatment of Hemorrhoids. C. W. Simpson.
62 Ergoapiol (Smith) in Diseases of the Female. Charles H. Shepard.

Hot Springs Medical Journal, July.

63 Tuberculosis, the True Malaria. R. R. Dinwiddie.
64 Adenoids and Their Complications. E. H. Cory.

Medicine (Detroit, Mich.), September.

65 *Flatfoot or Acquired Valgus. James K. Young.
66 *Pes Equinovarus. Gwilym G. Davis.
67 *On the Treatment of Talipes Equinovarus. J. P. Mann.
68 The Care of the Perineum During Labor and the Puerperium Based on a Study of Five Hundred and Fourteen Cases. Effa V. Davis.
69 *Pathogenesis and Surgical Treatment of Exophthalmic Goiter. A. E. Halstead.
70 *Subacute Combined Degeneration of the Spinal Cord, with Pernicious Anemia. William Pickett.

St. Paul Medical Journal, September.

71 The Character and Tendency of Our Current Medical Literature—Notes on Its Development, Progress and Influence. Franklin Staples.
72 Dilatation of the Stomach. Christopher Graham.
73 *The Fallacy of Drainage in Diffuse Septic Peritonitis. Donald B. Pritchard.
74 The Blood in Relation to Anesthesia—Especially Chloroform and Ether, with Report of a Case of Chloroform Coma. Carl J. Holman.
75 Organization of the Medical Profession. Arthur Sweeney.
76 How Can the Public Best be Educated as to the Importance of Preventive Medicine? H. M. Bracken.
77 The Stomach Tube in Practice. A. E. Hedback.
78 Some of the Etiologic Factors in Epilepsy. W. A. Jones.
79 Fractures and Dislocations of the Nose and Their Treatment J. W. Robertson.
80 Sarcoma of Unusual Size. W. H. Magie.

The Alienist and Neurologist (St. Louis), August.

81 *Extra-neural or Adneural Nervous Disease. C. H. Hughes.
82 Puberty and Genius. Cesare Lombroso.
83 Extra-neural and Adneural Nervous Diseases. C. H. Hughes.
84 *A Question of Figures. E. C. Spitzka.
85 Outlines of Psychiatry in Clinical Lectures. C. Wernicke.
86 Pseudospastic Paresis. R. von Krafft-Ebing.
87 *Dipsomania Ending in Paranoia. James G. Kiernan.
88 *The Rational Treatment of Locomotor Ataxia. Curran Pope.
89 A Neuro-psychologist's Plea for Byron. Charles H. Hughes.

Pediatrics (N. Y.), September 1.

90 *Etiology and Prophylaxis of Epilepsy. D. S. Hanson.
91 *The Pneumonias of Infancy. F. L. Lapsley.

Memphis Medical Monthly, August.

92 Pure Food and Pure Food Laws. Felix Paquin.
93 Treatment of Summer Diarrhea. C. H. Johnston.
94 Some Suggestions in Clinical Diagnosis. O. S. McCown.
95 Fallacies Concerning Adenoids. Richmond McKinney.
96 The Therapeutic Value of Normal Salt Solution. Jere L. Crook.
97 Rheumatoid Arthritis. F. B. Hamilton.
98 Puerperal Eclampsia. F. E. Wyatt.
99 Operation for Absence of Anus. G. A. Causey.

International Medical Magazine (N. Y.), August.

100 *The Treatment of Asphyxia Neonatorum. John B. De Lee.
101 The Treatment of Extra-uterine Pregnancy. W. Wayne Babcock.
102 *The Treatment of Obesity Complicated by Various Diseases. Carl von Noorden.
103 *The Surgical Treatment of Puerperal Sepsis. E. E. Montgomery.
104 *Is Craniotomy Ever Justifiable? Wilmer Krusen.
105 A Brief Review of 500 Cases of Labor. J. Howard Cloud.

The American Practitioner and News (Louisville, Ky.), August.

106 The President's Address. T. B. Greenley.
107 Chancre of the Tonsils. Wm. Cheatham
108 The Hand in Factory Surgery. C. C. Goodshaw.
109 Dysmenorrhea. R. T. Yoe.
110 Three Cases of Puerperal Convulsions. R. B. Gilbert.
111 Acute Articular Rheumatism. J. J. Wakefield.
112 The Gall-Bladder. J. L. Johnson.
113 Phlyctenular Inflammation of the Cornea. M. F. Coomes.

Medical Times (N. Y.), August.

114 Résumé of the More Recent Advances in Urethral Pathology and Therapeutics. G. Frank Lydston.
115 A Contribution to the Study of Herpes Zoster. Noah E. Aronstam.
116 Skin Diseases in Children. M. E. Fitch.

Virginia Medical Semi-Monthly (Richmond), August 22.

117 A Brief Résumé of the Treatment of Tuberculosis. G. E. Malsbary.

The Clinical Review (Chicago), September.

118 Report of a Case of Addison's Disease, with Negative Results from the Administration of Supra-Renal Extract. L. L. Skelton.
119 Operations On the Intestines—Abstract of Clinical Lecture on Operative Surgery. A. J. Ochsner.
120 Clinical Lectures On the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

The Cincinnati Lancet-Clinic, September 6.

121 Prolapsus of Pregnant Uterus Following Amputation of Cervix: Delivery by Forceps After Incision of Cervix Followed by Immediate Repair. J. M. Withrow.
122 The Cycle of a Family. E. S. Johnston.
123 Euphrasia. B. S. Horne.
124 A Case of Intraocular Hemorrhage. F. W. Davis.
125 Seton. E. Cundell Juler.

University of Pennsylvania Medical Bulletin (Philadelphia), August-September.

126 *The Influence of Alcoholic Intoxication On Certain Factors Concerned in the Phenomenon of Hemolysis. A. C. Abbott and D. H. Bergey.
127 President's Address, American Surgical Association. De Forest Willard.
128 The Present State of Our Knowledge of Diabetes Mellitus. James Tyson.
129 Congenital Perforations of the Parietal Bones. George A. Piersol.
130 Urethral Chancre. Henry Norris and J. M. Asher.
131 Memoir of Dr. William Fisher Norris. George C. Harlan.
132 *Diagnosis by Means of the Serum of the Blood: A Critical Study. Joseph Sailer.
133 A Sporadic Case of Cerebrospinal Meningitis with Notes of an Epidemic of the Disease in Philadelphia. T. R. Currie.
134 Epithelioma of the Axillary Glands Presenting the Clinical Features of Tuberculosis. I. Valentine Levi.

The International Journal of Surgery (N. Y.), September.

135 Briefs on the Surgery of the Genito-Urinary Organs. G. F. Lydston.
136 Nose and Throat Work for the General Practitioner. G. L. Richards.
137 Some Cases of Appendicitis. A. B. Anderson.
138 The Technics of Amputation. R. H. Cowan.
139 The Surgical Assistant. W. M. Brickner.
140 A Few Suggestions on the Treatment of Sterility in Women. W. O. Davis.

The Toledo Medical and Surgical Reporter, September.

141 Care of the Woman During the Puerperal Period. W. V. Anderson.
142 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.
143 Old-Time Doctors and Doctoring. J. T. Woods.

Medical and Surgical Monitor (Indianapolis), August 15.

144 Medical Jurisprudence. J. T. Beasley.
145 Pemphigus Vulgaris (Illustrated). G. R. Green.
146 Observations Relating to Surgical Technics. J. R. Eastman.
147 Maternal Nursing. J. T. Scott.
148 A Case of Parenchymatous Nephritis, with Remarkable Recovery. J. W. Crismond.
149 Hysteria and Hystero-Mania. Wm. B. Fletcher.

Dominion Medical Monthly (Toronto), September.

150 Some Results That Are Being Attained by the Use of X-rays, with Exhibition of Patients. J. McMaster.
151 Some Uses of the X-ray Other Than Diagnostic. C. R. Dickson.
152 The Use of X-rays in Cancer, Lupus and Hodgkin's Disease. F. W. Hett.

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1. **Organacidia Gastrica.**—This is, according to Knapp, the most frequent and important disease of the stomach. He recognizes three forms, organacidia gastrica simplex, gastrosia fungosa and zymosis gastrica. The first of these is due to the presence of organic acids caused by the ingestion of too much acid foods such as pickles, etc., and is relieved by an emetic or cathartic. The most frequent disease of the three is gastrosia fungosa, due to the presence of mold in the stomach. Knapp describes the presence of this by the appearances under the microscope, and remarks on the comparatively slight mention in literature. It is introduced through the diet. Just how the molds lodge there does not seem to be so definitely decided. He thinks that the fungus growth is very much influenced by saccharin matter in the chyme. The symptoms are various, according to the quantity and the degree of concentration of the organic acids. In the milder cases the symptoms may be interpreted by the patient as hunger, or increased desire to eat. The symptoms may vary from simple uneasiness to severe pain and cramps, and every gradation between these. The pains either appear before or after meals, and when they assume the character of cramps they come after eating, and at various hours according to the special conditions in the case. The presence or absence of HCl has its influence; the earlier this is secreted and the larger quantity, the later will the pains appear. The summary of the symptoms are: Heartburn, rawness or pain, spasms or cramps, in the region of the

pylorus and posteriorly on the left side at about the ninth dorsal vertebra, burning sensation in the epigastrium, rawness and burning behind and along the sternum and between the shoulder blades, a choking sensation, dryness in the throat, thirst, polyuria, excessive perspiration, sour taste, regurgitation of sour masses, vomiting, and, as a rule, headache, which is most often of the frontal type. The clinical symptoms must be confirmed by an examination of Ewald's test meal, and the quantity and quality of chyme. This is of a green color due to mold, and has a sweet odor caused by succinic acid. The prognosis is good in uncomplicated cases. In complicated cases it will depend upon the nature and extent of the complication. If long continued it may have for its sequel inflammation of the pyloric region and insufficiency. Varicose veins may thus cause rupture, and the dietetic treatment is avoidance of anything that may carry mold into the stomach, and having food freshly cooked. Knapp usually gives HCl at meals, and a mixture of equal parts of sulphuric and phosphoric acids 10 to 20 minutes after meals, according to the existing conditions. Fifteen drops of this acid mixture in a glassful of water, preferably warm. The dilute nitric acid is also good, but needs watching. Some cases seem to need arsenic as a later treatment. Zymosis gastrica is due to the presence of yeast cells and is caused by ingestion of food containing yeast. The microscopic test is the presence of yeast cell chains, and the chemical test will be for acetic and butyric acids. The prognosis in recent cases is even better than in the former condition, but complications are more serious. The treatment is mainly the same as that in the disease already mentioned. The diet must be more guarded. Stale bread must be prohibited, fruits that contain yeast, soda water, cabbages, turnips, radishes, raw onions, beans, unless stripped of their outer coverings, peas only when split, and acid foods. Coffee and tea must also be excluded. Only a moderate amount of milk should be allowed. The mechanical treatment is the same as that in the former disease—gastric lavage. The complications mentioned are ulcerations, and in children laryngismus and pharyngeal inflammations. The influence on the intestines can not be favorable. The esophagus may also suffer.

3. **The Health of School Girls.**—Newton thinks that girls suffer greater handicaps in school life than boys, and are more apt to work beyond their strength and suffer from effects of school strain. He thinks we should begin the physical education of women earlier and make it more thorough, and dress them differently if they wish to have an equal chance with men as workers.

4. **Prostatic Gonococcal Auto-Reinfections of the Urethra.**—The summary of Townsend is given as follows: "1. Early and vigorous efforts should be made to prevent gonorrheal prostatitis. 2. Once established, all care should be taken to prevent it from becoming follicular and chronic. 3. Auto-reinfections of the urethra from chronic prostatitis can be differentiated from acute infections. 4. An opinion on the probabilities of future recrudescences should be very guarded. 5. Each prostatic massage should be immediately followed by thorough irrigation of both portions of the urethra, to prevent recurrent acute urethritis. 6. Omission of this irrigation is sometimes permissible for diagnostic purposes."

6. **Vaginal Suturing of the Round Ligaments.**—Vineberg reports later results of his formerly reported cases, and also those of several later ones. He thinks that his method of operating is a proved success, but emphasizes the great care required not to wound the anterior wall of the uterus in bringing it into the vaginal incision. He criticises the very roundabout methods adopted by some operators for the relief of retroversion for the sake of being original. He asks why they try to perform all kinds of fantastic tricks with the round ligaments, when the simplest and most reasonable thing to do is to suture them to the vaginal wall.

7. **Porto Rico.**—Coley speaks of Porto Rico as a health resort and gives advice as to its climate. The presence of tuberculosis among the natives does not contraindicate its being a health resort, for the natives have been living under most unsanitary conditions. The single feature of the excessive humidity must be considered by tourists, and there is vast room for improvement in accommodations. Visitors in Porto Rico, as in all other tropical climates, must pay strict observation to the simple rules of hygiene and diet.

8. **Tubercular Cystitis.**—Bissell describes the symptoms of tubercular cystitis, and calls attention particularly to the signs of pain, tenesmus, frequency of urination and hemorrhage. Later, pus and ulcerated tissue may appear in the discharge. He thinks the frequent voidance of clear urine without pain and without apparent cause, with a few drops of bright red blood at the end, or less frequently at the beginning, is almost a sure sign of beginning tubercular cystitis. We should look into the history of the patient, making a thorough examination in every respect. The following is a good rule in routine practice: "Given a patient with slight infiltration of the apex of one lung, or a suspicious epididymitis, a renal tuberculosis, a tubercular peritonitis or a lymphatic infiltration, even without the finding of the bacillus or any other sign of consumption, who develops vesical symptoms, it is better to consider it a case of tubercular cystitis than to remain in doubt until the contrary is proven." The history of a trauma or injury, a previous attack of acute or chronic urethritis, overdistension of the bladder, instrumentation, irritant injection, may also help. The pulse is also noticed; it is usually more frequent. Albumin is also usually present to some degree. The greatest difficulty is in diagnosing this condition from stone, or more particularly, differentiating stone from tubercular cystitis. He advises against early operative treatment before trial of rest and elimination of the cause and building-up of the resistance of the system generally.

9. **Nephroptosis.**—Goelet thinks that temporary fixation of the kidney in a proper position for a short time after exciting the necessary degree of irritation to induce plastic inflammation, is usually sufficient to induce permanent fixation, therefore temporary sutures inserted so they will not cut out, and tied on the skin surface, are usually sufficient. His method is described by him as follows: "A vertical incision is made along the outer border of the erector spinæ from just below the last rib downward through the skin and fat down to the superficial layer of fascia; this is divided with scissors, the underlying muscles are separated in the direction of their fibers by means of blunt hooks and are held apart by broad retractors. The fatty capsule surrounding the kidney, which is exposed after dividing the deep layer of fascia, is drawn down and opened well up and well over toward the spine to avoid opening the peritoneum or wounding the intestine which bulges up into the wound. The kidney is then separated from its fatty investment all around and that part of the fatty capsule covering its posterior face is removed completely. It is important to separate the kidney completely from its attachment to the intestine upon its anterior face to obviate dragging upon it from that source. The redundancy of the fatty capsule on this side is also removed, taking care not to encroach upon the intestine or peritoneum. The suture material employed for the temporary sutures is silkworm gut rendered pliable by a method that I have described elsewhere. The needle used is very small, so as to cause as little injury as possible to the fibrous capsule. Two sutures are inserted, the upper one at about the center of the kidney and the other at about the junction of the middle and lower third. The lower suture is inserted first from above downward under the fibrous capsule only for a distance of about half an inch from its entrance to its exit; then it is inserted transversely about the same distance, and again from below upward at an obtuse angle to the transverse insertion. Thus this suture has three insertions under the fibrous capsule only. The upper suture is inserted from above downward and from below upward, leaving the suture exposed upon the surface transversely for a distance of three-quarters of an inch. The ends of these sutures are carried through the structures of the back and brought out on the surface at the upper angle of the wound just below the lower border of the last rib. They are tied across the line of incision over a fold of several layers of gauze, which obviates cutting of the skin by the sutures and loosening of the loop.

When these sutures are both tied, the upper pole of the kidney is drawn up into its original position under the ribs and its lower half is brought into intimate contact with the muscles exposed in the wound. The kidney, which before could be seen to move up and down with respiration, is now seen to be immovably fixed. A strip of gauze is packed under and about the lower pole of the kidney and the end is brought out at the lower angle of the wound for drainage. This furnishes additional support to the kidney, lessening the strain on the sutures while it remains, and excites plastic inflammation. Iodoform gauze (5 per cent.) is used, because it is somewhat more irritating than the plain gauze, but it is not wise to use a higher percentage of iodoform, because of the susceptibility of some patients. In one of my cases iodoform poisoning resulted from using 10 per cent. gauze freshly prepared with alcohol and ether. The gauze is removed always on the second or third day following the operation. In closing the wound, a continuous suture of plain catgut is used for approximating the superficial fascia, and interrupted adhesive strips upon the skin surface. The patient is kept in bed for three weeks. During the first week she is kept constantly upon her back, being turned upon the side only to renew the dressings. The sustaining sutures are not removed until the day before she gets up. Primary union is the rule, and the resulting scar is not disfiguring. It is advisable to have these patients wear a snugly-fitting elastic abdominal belt upon getting up and for several months after, as most of them have lax abdominal walls, which, if not supported, deprive the kidney of the normal support of the abdominal organs."

10. **Uremia.**—This condition, which Grandin prefers to call mixed toxemia, is considered here as a post-operative sequel or as a complication of pregnancy or the puerperal state. The prophylactic treatment, he says, consists in relieving strain on the emunctories and securing free action of the liver and the sweat-glands. He believes in an absolute milk diet associated with some form of readily assimilated iron, and advises regular Turkish baths when there is no heart complication, and a drug which favors the action of the liver, his preference being elaterium in small and repeated doses. Plenty of water should also be ingested. In acute cases all drugs which tend to whip the kidneys should be avoided. He would use the nitrites, and the best form, he thinks, is nitroglycerin hypodermically. He pushes this fearlessly, to the extent of 1/20 of a grain, repeated every 15 to 20 minutes. To promote liver action he uses elaterium in eighth-grain doses at intervals, and with these drugs he also used digitalis to tone up the left heart. High hot saline injections of gallons of hot water thrown in and allowed to come out are useful. This procedure should be kept up for hours if necessary. When toxemia is active, chloroform is one of the sheet anchors. For a bounding pulse he prefers bleeding to the use of veratrum. He is opposed to opium. The only condition requiring surgery is when the phenomena ensue as a complication of pregnancy, and the rapid evacuation of the uterus in addition to the other methods described, is then advisable. He would allow the woman to bleed some if the condition of the pulse suggests plethora.

13.—See JOURNAL of May 24, xxxviii, p. 1393.

14. **Pulmonary Valve Affections.**—Satterthwaite first notes the rarity of these lesions in adults, and reports six personal observations. He remarks that the more common congenital type is easily recognized by the cyanosis, clubbed fingers and toes and abnormal chest development, etc. In the acquired type the most important physical signs are: "1. Displacement of the apex. 2. Diastolic thrill in the second or third left space (in 20 per cent., Barie), from the edge of the sternum to a distance of one inch to the left of it, conducted down to the left edge of the sternum (Boyd). 3. Double murmur (in about 25 per cent.). 4. Diastolic bruit intensified by inspiration. 5. Implication of the lungs. 6. Murmur intensified in the sitting position. 7. When a long breath is taken the vesicular murmur is jerky. 8. Hemoptysis. 9. Dyspnea. 10. Usually, but not always, hypertrophy of the right ventricle. 11. Epigastric pulsation. The pulse has no distinctive character. Often there will be no bruit at all; we must, however, discriminate against aortic disease (insufficiency) by the absence of hypertrophy of the left ventricle by the Corrigan pulse. The murmur should be lower than an aortic." The diagnosis would be more frequent, he thinks, if physicians were more systematic in their examination. The prognosis is unfavorable in congenital cases, somewhat less so in acquired cases, as compensatory right hypertrophy may ensue, but is never very good. The patients usually succumb before middle age. Congenital pulmonary stenosis as a single lesion is excessively rare, but Satterthwaite reports a case and also one of apparent temporary stenosis from extra-cardiac pressure, relieved by evacuation of an abscess. He reviews the symptoms of these conditions more at length, also the apparent causes, imperfect development in the congenital form, and antecedent infections, especially rheumatism or specific disease in the acquired cases.

15. **Heart Disease.**—The points specially emphasized by Snively are: "1. Each patient showing a heart lesion must be a study unto himself. 2. No heart medicine is needed unless the myocardium is unable to do its work in a physiological way. 3. The heart muscle should demand more consideration than the heart murmur. 4. Rest is one of our best therapeutic agents. 5. We should try by every possible means to prevent myocarditis in all diseases where this condition is apt to rise. 6. After any severe disease process we should insist upon the patient resting in bed long enough to allow the myocardium to be restored. 7. We should improve the general nutrition of our patients and restore the blood to a normal standard by the use of blood tonics. 8. We should investigate the kidneys in all cases showing signs of cardiac incompetency. 9. Physical exercise, light gymnastics and properly selected diet are valuable aids in the treatment of cardiac disease."

17. **Tricuspid Diseases.**—The symptoms of tricuspid insufficiency are reviewed by Satterthwaite. They are seldom recognized during life, notwithstanding their prominence. The most significant one is a systolic murmur over the lower half of the sternum and ensiform cartilage, next epigastric pulsation, faintness of the second pulmonary sound, and of less importance, the jugular pulse. Simple fulness of the jugulars is also a noteworthy sign. The prognosis is generally bad. Tricuspid stenosis is also described and cases reported. It occurs chiefly in women and he says that given a woman under forty, with a diastolic murmur in the tricuspid area, where the pitch, quality or other characters distinguish it from the mitral murmur and with 1, a co-existing mitral stenosis; 2, an enlarged and dilated right auricle; 3, palpitation, cyanosis, dyspnea and edema; 4, the epigastric pulse, and 5, a previous history of rheumatism, it will be safe to make a diagnosis of tricuspid stenosis.

19. **Nasal Obstruction.**—This, especially when from septal deflection, is, according to Shields, a not uncommon cause of laryngitis; it causes acrid secretions which fall back and irritate the larynx. Mouth breathing may also play its part, especially when the obstruction is from hypertrophic rhinitis. Many cases of supposed laryngitis are, however, in his opinion, only reflexes from enlarged tonsils, and are improperly treated by local laryngeal applications when attention to the tonsils would suffice. The causes of septal deflections are also considered. He gives the greatest importance to trauma, and after this to adenoids, and race mixture. The operative procedures are described; for septal straightening he prefers Gleason's or Hajek's method. The crushing operations and splints are not considered favorably, as he thinks they do not insure against relapse.

21. **Pernicious Anemia.**—Billings finishes his article, which is a thorough discussion of the spinal and medullary changes in this condition, with the following conclusions: "1. That there is a well-established relation of diffuse cord degeneration with pernicious anemia. 2. It seems highly probable that the hemolysis and the cord changes are due to the same toxin. 3. While the source of the toxin is unknown, the fact that gastro-intestinal disturbance is so common in the disease would lead one to suppose that it is of intestinal origin. 4. The diffuse

degenerations of the spinal cord which occur in conditions without pernicious anemia do not appear to differ essentially from those of pernicious anemia. 5. It is possible that a common blood-circulating poison exists which may expend its force upon the blood in one individual, upon the nervous apparatus in another, and coincidently upon the blood and spinal cord in others."

27. **The Biologic Blood Test.**—Patek and Bennett review the history of this method of differentiation and report their own successful results in a murder case. Their method was essentially that of Uhlenhuth and they consider their results sufficiently positive, though they were not admitted in evidence on account of the delayed collection of the materials submitted to them.

29. **Typhoid Perforation.**—Seven cases, three of them successful, are reported by Hays. He calls attention to the distinction of the perforation symptoms from those of the following peritonitis, especially the local pain, collapse, etc., and thinks that ordinarily the diagnosis ought not to be difficult. The operation should be early to obtain a large percentage of recoveries.

32. **Crural Thrombosis.**—Schenck, from an analysis of the cases occurring in the gynecologic department of the Johns Hopkins Hospital, comes to the following conclusions: "Thrombosis of the crural veins is more common after pelvic operations than is generally recognized. It occurs more frequently in those cases in which large tumors, springing from the pelvic organs, have been removed. It rarely follows extrapelvic operations. In this series it has been infrequent after infected cases. The anemia and cachexia in consequence of new growths seem to be factors in its causation. Constipation and the use of enemata play a doubtful part in the etiology. Traumatism at the time of the operation should be borne in mind and deep retractors used with extreme care. Infection is undoubtedly of great importance, but its frequency is difficult to decide. This complication often occurs when least expected and usually late in convalescence. Albumin in the urine is more frequent in these cases than in those running an uninterrupted course. The pulse curve of Singer does not always occur. The results of rest and elevation for the full length of time are excellent. When the time is lessened, swelling and pain persist, and the danger of pulmonary embolus is increased."

34. **The Age of Consent.**—The laws of the different states as to this point are reviewed. Dyer holds that the age of consent should be raised to a point of years when some actual discretion may obtain. There are, he thinks, few females who fully appreciate their sex relation at eighteen, and the ages of consent in some states, Alabama and North Carolina for example, are ridiculously low.

35. **Electricity in Constipation.**—The utility of electricity for the relief of habitual constipation is discussed and cases reported by Cohn. He uses the static, sinusoidal, faradic and galvanic currents, with the former as his first choice. He sums up as follows: "Taking into consideration the fact that, of the twelve cases reported, 75 per cent. showed a complete cure, I have come to the following conclusions: 1. Electricity should not be employed as a last desperate chance after all other means have failed, but should be given a front rank in the treatment of this disease; 2, especially the static currents, with their powerful vibratory effects, should be employed more frequently than has been done heretofore; 3, the reduction of abdominal circumference by use of these currents is a proof of their tonic influence upon the abdominal muscles; 4, the most powerful means of obtaining this tonic condition is the administration of the swelling, or undulating current."

39-40. **Sigmoidopexy.**—The case reported by Jacoby was one of long standing and severe rectal prolapse, as shown by the illustrations. It was completely relieved by a McBurney incision of the left side, incision of the peritoneum and the sigmoid drawn until all the slack had been taken up and sutured to the abdominal wall with a kangaroo tendon suture carried under the anterior longitudinal band, then carried obliquely across, after which it was again passed under the band. Thus there existed two free ends opposite each other, which were carried through the *peritoneum*, *transversalis*, and internal oblique muscles on each side, respectively, giving an indirect figure eight when the two ends were tied. They were tied so that the opening was nearly closed and the bowel held firmly against the parietal peritoneum and abdominal wall. The remainder of the opening was closed with another kangaroo tendon, and the skin incision brought together with interrupted silkworm-gut sutures. The patient was kept on liquid nourishment for a little over a week and then put on a light diet, which was quickly changed to the full diet. He asked for discharge twenty days after operation. Jacoby thinks the figure eight suture that is employed is worthy of consideration because it brings into close and continuous contact the two serous surfaces, as well as the abdominal wall and intestine, and is better able to sustain the weight and tension.

43. **Intracranial Tension.**—Cushing's article is an elaborate report of experimental data and a discussion of the results. In conclusion he says: "From this rather superficial review of the alterations in the cerebral circulation as they are influenced by varying degrees of compression, some effects stand out with especial prominence. In the first place, the venous stasis, which becomes apparent on but a moderate increase of the tension, fortunately gives early evidence of itself in the eye-grounds except in those cases of local compression, in posterior basic meninges, for example, so remotely situated that the compression effects are not readily transmitted as far as the cavernous sinus and ophthalmic veins. Furthermore, local pathologic processes, such as are confined to the hemispheres, may be responsible for local circulatory disturbances sufficient to cause a cessation of function of a large part of the forebrain without leading in any way to a corresponding implication of the medulla. When, however, the local process is in the near proximity of, or, if remote, when its effects are so far reaching that the vital centers of the bulb are compromised, the one symptom which with regularity is called forth, and which betokens a serious alteration in the local circulation, is a persisting rise in blood-pressure, which may or may not be associated with a pronounced vagus pulse, with rhythmic alterations in blood-pressure and with a retardation of periodicities of the respiration approaching a Cheyne-Stokes type. The first and minor symptoms of compression are found in association with varying degrees of intracranial venous stasis, the major symptoms of 'Hirndruck,' with an approaching capillary anemia of the medulla."

44. **Thermic Fever.**—This article, based on 92 cases of thermic fever occurring in the experience of the writers at the Pennsylvania Hospital during the hot weather of July, 1901, includes only those showing a temperature of 100 F. and over on admission and not including the many cases of mere heat exhaustion. The conditions as regards convulsions, mental state, pupils, knee-jerk, urine, etc., are noted in a number of cases, though complete observations were not made in all. The previous habits of the patient seem to have an important bearing on the results. In the severe cases 50 per cent. of those where data were obtained gave an alcoholic history. The blood was examined in a certain number of cases both as regards the appearance and the blood count. They found an absence of high constant specific gravity and increase in the number of red cells which was rather surprising. The number of leucocytes varied. In some cases a leucocytosis chiefly in the polymorphonuclears was observed. They believe, however, that injection of large quantities of normal salt solution saves some patients. Treatment in the mild cases was simple; ice pack, aromatic spirits of ammonia and alcohol, and occasionally a cold bath. In the severer cases stimulants were used and an ice cap and the cold bath, or in obstinate or very severe forms the patients were rubbed with ice. Bleeding was not advised as a routine measure, but it was used in eight severe cases, of which several died. The use of normal saline solution was employed on theoretic grounds, and was found to be of value. Hypodermoclysis was employed in five cases, all severe, but it occupied too much time to be perfectly satisfactory. The injection into a vein was more applicable. The authors think

valuable results might follow the further study of diseases of the eye-ground, of the specific gravity of the blood, and its spectroscopic examination, frequent estimation of the leucocytes and more complete study of the toxicity of blood serum. They also believe that injection of normal salt solution in large quantities into the body has beneficial results, though they do not show exactly how it acts.

48. **Benign Cystic Epithelioma.**—Besides reporting cases Hartzell discusses others in the literature and remarks in conclusion that there is apparently more or less confusion as to the exact relationship of the different types. He thinks that these represent three affections, presenting lesions which can only be distinguished from one another with the aid of the microscope, but which are quite distinct in their nature and origin: "1, benign cystic epithelioma, in which the lesions are usually, but not always, situated upon the face, and have their origin in the basal layer of the epidermis and the external root-sheath of the hair; 2, cystadenoma, in which the eruption occurs upon the trunk, the tumors starting in the sweat-gland apparatus; and 3, hemangio-endothelioma likewise situated upon the trunk, but originating in a proliferation of the endothelium of the blood vessels."

49. **Post-Operative Non-Septic Leucocytosis.**—From a study of a number of operations with careful attention to the blood count, King draws the following conclusions: "1. An increase of from 5000 to 10,000 leucocytes per cubic millimeter following operation in from six to thirty-six or even forty-eight hours is a normal post-operative condition, provided it be not sustained. 2. Probably the maximum leucocytosis in the majority of cases occurs within the first twelve hours after operation, and is very transient. 3. The leucocytosis in the normal reparative process bears but slight relation to the pulse and temperature. 4. A post-operative leucocytosis of 10,000 or more above the individual normal, sustained for more than a few hours, may be looked upon with suspicion. 5. The apparent increase in number of erythrocytes following operation is not caused by an actual increase of red cells in the circulating blood."

50. **Entrance of Air into the Veins.**—The conclusions of Goodridge's experimental study are given as follows: "1. That entrance of air into the veins, even in small amounts, is to be dreaded, as it may result in death. 2. That death is due to gaseous distention of the right heart or to air emboli in the coronary vessels, and not to primary respiratory paralysis. 3. That combined treatment by aspiration and infusion we may expect to be attended with good results. In conclusion, I would say that I believe the statement 'that large quantities of air may be introduced into the veins without unfavorable result' to be pernicious teaching and not supported by fact." He remarks as regards the application of his experiments to the human subject that in operating in the region known as the danger zone, none but the prone position be permitted, for should one of the veins be injured the semi-prone or sitting posture predisposes to the entrance of air into the veins. If any dissection is necessary it should be performed with a blunt instrument, never with a scalpel. Special care should be used if the operation be for the removal of cancer or tuberculous glands which are more or less intimately connected with the adjacent structures. If warned by the hissing sound accompanying entrance of air into the vein, the finger should be pushed into the point to prevent further admission of air and the wound cavity should be filled with salt solution and the chest compressed forcibly. If bubbles are seen in the fluid contained they are due to air coming out. If, however, the heart become tumultuous and if the respirations become labored and the inspirations forced a needle should be inserted into the fourth left interspace one inch from the left border of the sternum. It should be directed upward and backward obliquely and the right ventricle will be entered; aspiration should be continued until the blood comes out unmixed with air. Then a normal salt solution at a temperature of 115 to 120 should be injected until an amount has been introduced equal to the quantity taken out. The most convenient point for this infusion is the median basilic vein.

53. **Treatment of Pneumonia.**—The present status of the treatment of pneumonia is summed up by Wilcox as follows: "1. Continuous, persistent, and generous administration of creosote carbonate. 2. Careful adjustment of mechanical conditions. 3. Thorough evacuation of toxins by all possible ways. 4. Temporary supplemental oxygen by inhalation. 5. Liquid diet until physical signs disappear. To be avoided are antipyretics, opiates, ill-advised external applications and slowly-acting heart remedies, as digitalis."

60. **Rectal Valves.**—Cooke reports here the opinions of a number of prominent surgeons with whom he has corresponded in regard to their views as to the existence of Houston's rectal valves, including among them Drs. Gant, Beach, Pennington, Howard A. Kelly, and Douglas, who all strongly hold to their existence and importance. He reports a case of operation and concludes that these structures are definite anatomical entities and should be recognized as such as much as the appendix vermiformis.

65. **Flat-Foot.**—Young discusses the diagnosis of flat-foot and the differentiation between rheumatism and other conditions which may suggest it, also its treatment. He recommends a method of measurement to indicate the condition in flat-foot, and gives the angular measure and also mentions the use of the inclined mirror in diagnosis. In the milder cases the restoration of the arch may be accomplished by the use of a pad of gauze held in place by adhesive plaster and by a bandage, or for permanent use a plate or steel spring covered with hard rubber. Exercise and massage also form an important part of the treatment, and should be done under the supervision of a physician. In the moderate degree of flat-foot, besides the measures already described, forcible correction under ether has been most satisfactory. If tenotomy of the tendo Achillis is required it should be performed. For forcible correction a pad should be held in position in the sole of the foot by plaster casts and worn several weeks, the treatment continued and ankle braces employed after its removal. In the severe forms operative measures should be employed, including procedures on the muscles and skin intended to shorten the arch of the foot by cicatricial contraction, and shortening or elongation of the tendons, as necessary. Only in exceptional cases will the removal of the astragalus be required.

66. **Pes Equinovarus.**—Davis relies on manual manipulations in preference to operation and thinks the latter will rarely be necessary if the first are thoroughly attended to. If the practitioner would begin this treatment in the earlier stages there would be far less old incorrigible conditions requiring operation.

67. **Talipes Equinovarus.**—Mann holds that no case of congenital flat-foot should be operated on until the child has learned to walk, which usually occurs from the twelfth to the twentieth month. With skilful manipulation and, if necessary, retentive apparatus, many cures can be effected when there is a slight deformity. Severe cases, however, require, besides the operation, mechanical treatment both previous and subsequent to it. The risk of operating in feeble children is to be considered, while mechanical treatment judiciously selected will never cause death. After the child can walk its body weight very materially contributes to the retention of the foot in the corrected position. Properly directed muscular action also aids in a cure. In operations done too early, except with the utmost care, relapses are liable to occur.

69. **Exophthalmic Goiter.**—Halstead holds to the hyperthyroidization theory of exophthalmic goiter and pleads that where a fair trial of the medical treatment has been made and the patient not too reduced surgical treatment is indicated. It is positively indicated where the goiter is large and causes marked pressure symptoms, especially where there is great dyspnea and asphyxiation is threatened. In very severe cases no prolonged operation can be done and only tracheotomy for temporary relief be borne. Another positive indication is where the degree of exophthalmus is such as to endanger their eye. Operations on the gland, however, frequently do not immediately influence the exophthalmus and sometimes do not aid at all. For such cases excision, preferably bilateral, of

the cervical sympathetic seems to be the best method of relief. The surgical treatment, as a rule, is more useful in cases of rapid development than in the chronic form. The operative measures are ligation of the thyroid arteries, exothyropexy, enucleation of nodular growths, and partial or unilateral excision. None of these excepting the latter is considered specially advisable by the author. The operations on the cervical sympathetic are simple section, partial resection, total bilateral resection and stretching. The latter can be left out of consideration. Partial resection gives on the whole more favorable statistics than simple section. Bilateral section seems to have given a fair amount of recoveries; according to Jaboulay, 58.9 per cent. recovered and 29.4 per cent. were greatly improved.

70. **Spinal Cord Degeneration.**—Pickett reports a case which seems to support the conclusion that we have in subacute degeneration of the cord two processes, one systematic, the other diffuse, and it is also a slight rebuttal of the view that the subacute combined degeneration of Russell, Batten and Collier is never associated with pernicious anemia.

73. **Drainage in Peritonitis.**—Pritchard protests against the use of drainage in diffuse peritonitis. He thinks we do not sufficiently rely on the peritoneum and that if we did some cases would be saved that otherwise die.

81. **Extra-Neural Disease.**—This designation is given by Hughes to diseases of the nervous system arising in other parts of the body, such as the nervous complications of diphtheria, malaria, syphilis, etc. He discusses the theories of Lugaro, Marinesco, Robertson and others in regard to the changes which occur in the neuron, chromatolysis, etc.

84. **Regicides.**—The article of Spitzka's is continued and is largely polemic, combating Talbot's views.

87. **Dipsomania.**—Kiernan reports a case of some forensic interest in which a dipsomaniac was convicted of murder on a second trial in which the case rather went by default. After his removal to the penitentiary his insanity developed so rapidly that in two months he was transferred to the criminal insane asylum and later pardoned, to be sent to an eastern insane asylum, where he now is, having delusions and other paranoiac symptoms.

88. **Locomotor Ataxia.**—Pope advises a generous diet, change of occupation, so as to avoid arm or leg strain, worry, care, etc., general hygienic measures, and for the drug treatment the only remedy he has found useful is nitrate of silver in 1/6 to 1/4 gr. doses three times daily one or two hours after meals. Iron, arsenic, quinin, cannabis indica, and glycerinated phosphates can be used for their tonic effects. Strychnia should be generally avoided. He has little faith in serum-therapy. Morphin may be used for the crises and other systemic treatment where indicated. Hydrotherapy is advised and the details given. He employs half baths, douches, etc. Electricity has been found useful in his hands, especially static electricity applied to the spine, extremities, etc., the sparks being as heavy as the patient can bear. Especial care should be given to the anesthetic regions, the soles of the feet, hips, etc. Lately he has been substituting high tension currents for the insulation and head shower and finds it has a marked influence in improving the general nutrition, removing the lightning pains and promoting a feeling of well-being. Next to the static current he thinks the galvanic, with the strength of 10 to 30 milliamperes, from the nape of the neck to the feet or labile to spine followed by a stronger current from a large pad over the lumbar region, or a current from the abdomen to the nape of the neck or lumbar region. He does not explain the *rationale* of the action of electricity and thinks it more or less empiric, but believes that it has decidedly good effects. He believes in massage and knows of no one agent that satisfies the patient as well as this, and in a few cases he has found suspension, though generally disused, still of value. Gymnastic exercises under proper supervision are of value, giving care, however, not to fatigue. He gives details as to these and says in conclusion that the disorder can not be treated by the general practitioner owing to the character of the apparatus, time, etc. No case should be considered hopeless, but every case will require close attention and individual study and the utmost patience and care on the part of both physician and patient.

90. **Epilepsy.**—Hansom believes that epilepsy can be prevented in many cases by proper care in childhood and puberty. Especial attention should be given to rickets, ascribed by Ohlmacher as the cause of epilepsy in many cases. The child that has inherited an unstable nervous system may contract epilepsy from an injury that a normal child would pass unscathed, and while traumatic causes may not always be prevented, much can be done to improve the resistance and to prevent the development of rickets and kindred disorders of assimilation in predisposed cases.

91. **Pneumonia of Infancy.**—Lapsley calls attention particularly to bronchial pneumonia of infancy, noticing the symptoms, physical signs, prognosis, etc. He protests against the use of the coal-tar antipyretics and would rely on sponging or warm baths, and aconite. He finds the latter drug useful in all forms of fever. The cough mixtures do not play much part in his treatment. Apomorphin and emetin will prove, he thinks, to be useful expectorants, especially adapted to the respiratory affections of childhood. Dry heat is best for local applications. Alcoholic stimulants are detrimental.

100. **Asphyxia in the Newborn.**—The most reliable sign of asphyxia before birth is in the fetal heart-tone, changes in frequency and quality. A steady slowing to 100 per minute, and certainly if below this, points to impending danger, and after this an increase to 160 or more, usually occurring after the diminution has been pronounced, implies death from vagus paralysis. If the quickening is primary it should have the same significance as slowing. Next in importance is the passage of fresh meconium with the liquid amnii. The discharge of meconium is analogous to the involuntary bowel movements that occur in other asphyxias, as drowning and strangling. Still another sign showing that asphyxia has already become serious, is feeling, seeing or hearing respiratory movements made by the child before complete birth. The prophylaxis is important. The waters should not be ruptured unnecessarily as the child is generally safe in an intact sac. Ergot should not be given during labor. No attempts should be made to hasten birth, especially in breech presentations. The fetal heart-tones should be carefully studied, especially toward the end of the second stage. The physician should be prepared to treat the accident. If the danger should be diagnosed *in utero* labor should be expedited as far as possible for the safety of the mother. If the child should die during its delivery leave the rest to nature, or, if operation is necessary, do embryotomy. After the child is born one must determine instantly whether the asphyxia is mild or severe. The child may be in a condition of apnea which may resemble mild asphyxiation, this condition being especially common in Cesarean sections. In mild asphyxia the child is rigid, blue, with turgid lips, slight exophthalmos, its pharynx and trachea are full of mucus, so that when it gasps no air can get into the lungs. The throat reacts to the finger. In severe asphyxia the extremities hang down, the surface is pale, the jaw falls, or is jerked by an occasional gasp, the throat does not react to the finger, the heart beats faintly, or is only perceptible to the ear. Anemia of the fetus and compression or hemorrhage into the brain present symptoms similar to severe asphyxia, but the treatment is the same. Morphin given the mother, especially in eclampsia, will sometimes produce narcosis in the child, which may be fatal. The three great principles governing the treatment of asphyxia, according to De Lee, are: 1, maintain the body heat; 2, free the air passages from obstruction; 3, stimulate respiration, or supply air to the lungs for oxygenation of the blood. He gives details as to these and describes the apparatus for mouth insufflation and the methods of artificial respiration. One's duty is not completed in having brought an asphyxiated child to crying. It may develop a secondary asphyxia due to atelectasis pulmonum, or there may be some pulmonary circulatory trouble in addition. When the child is partially revived one may try to expand the lungs by forced insufflations, but it should be carefully performed. There should not be too active or too persistent efforts.

102. **Treatment of Obesity.**—This fourth section of Von Noorden's article deals first with the treatment of obesity when complicated by kidney disease and he considers it fully as dangerous for patients with atrophic kidneys as for those with cardiac disease. He says many nephritic patients become too stout through improper diet and show all the signs of secondary cardiac disturbance. He prescribes in such cases a mixed diet poor in heat units, reduction of fluid taken, and advises cold rubbings; later a bath cure reducing the flesh and relieving the troublesome symptoms. In obesity complicated by chronic bronchitis there is little benefit until the superfluous fat is disposed of. In the obesity complicated by chronic articular rheumatism a marked loss of weight and removal of corpulence is an especial gain in many cases; thereby the overburdened joints are lightened and work is done along the same lines as the orthopedists follow when they make their sensible supporting apparatus bear a part of the pressure. In gout one is hard pressed as to diet. He believes that lean meat may be given, but care should be taken that plenty of green vegetables and fruit are added to the diet. There are frequently accompanying disturbances which demand a reduction cure far more than does the uric acid diathesis itself, such as kidney disease, arteriosclerosis, cardiac weakness, etc. He often thinks it would be better in these cases to speak of the misuse of alcohol as being the cause of the diseased condition instead of talking euphemistically of gout. There are many other diseases which impede locomotion besides rheumatism and gout, as the hemiplegias, etc. In these cases the reduction of superfluous fat is an advantage and is an important and urgent therapeutic problem whenever there is a prospect of helping patients by lessening the body weight. Massage and gymnastics are often brilliantly effectual. The favorable influence of reduction cures in certain forms of ischias and other neuralgias which occasionally occur in obese people, is especially to be emphasized. He has also cured a number of cases of the supraorbital and occipital variety of neuralgia by means of reduction cures, also some brachial neuralgias with anginic pains. It is impossible to say whether the reduction will prove useful or not in these cases, but success is frequent enough in his experience to justify the trial. In hysteria the conditions are difficult. Generally the patients are in a poorly nourished condition, but obese cases are not exactly rare, and it is especially those patients who develop obesity through rich diet and muscular laziness that the reduction cure begun under proper direction and carried out with increasing demands on the energy, is often the beginning of a new life with reawakening of strength and self-confidence. Such cures can only be successfully conducted in institutions. He believes that in diabetes mellitus the reduction cures are not entirely contraindicated, though diabetics bear a long-continued loss of body weight just as badly as they do a rapid one. Careful intermittent methods are chiefly to be recommended and the reduction of weight should be carried no further than absolutely demanded. In tuberculous patients we have sometimes an exaggeration of nutrition and he warns against overdoing the overfeeding in these cases. Such exaggerations are unfortunately frequent and treatment directed against the tuberculosis incapacitates the patient, because of the obesity which has ensued. He has followed up several such cases and he thinks they are not specially proof against relapses of the pulmonary conditions. They are often considered brilliant examples of success in institutions, but when they get out the downward course begins very soon. To the objection that the dangers of obesity are much less than those of pulmonary tuberculosis he answers that that is true, but one must ask whether it is necessary to drive away one enemy by courting another. In pulmonary tuberculosis it is not only unnecessary, but reprehensible, to try to attain more than a certain optimum of general condition.

103. **Puerperal Sepsis.**—The more closely the obstetrician follows aseptic methods the less frequently will the patient need the services of the surgeon subsequently. There are many conditions in which infection may cause a condition of ill health and we must not consider merely the prevention of death, says Montgomery, but the return of our patient to her normal condition and the preservation of her functions. There are two kinds of infection in childbirth—the putrefactive and the septic. The former is characterized by elevation of temperature and chills three days to a week following delivery; it is due to putrefaction of a blood clot, a portion of retained placenta or of membrane. This condition is associated with putrid or offensive lochia. It rapidly improves with the removal of decomposing tissue and the irrigation of the uterine cavity. The septic form is earlier and more insidious in its onset. The lochia are not necessarily offensive. The disease expresses itself as endometritis, salpingitis, oöphoritis, cellulitis, or peritonitis. The uterus is enlarged, sensitive to pressure, and the general condition of the patient is usually bad. There is a high continued temperature with resulting chills, profuse perspiration, and associated pain and tenderness. Secondary abscesses or pus collections may occur. The natural tendency of the surgeon is to explore and scrape the uterine cavity, but this is of doubtful service and may only open a new avenue for infection. Digital exploration and manipulation of the cavity, associated with irrigation, is of value in removing the loose debris and decomposing infected clots. It should be done with hot normal salt solution in preference to more active germicides, but followed by an iodoform gauze pack to keep the uterine walls separate and careful search should be made for any inflammatory exudate, and when it is found an incision should be made through the vaginal vault and the mass broken up and the cavity packed with iodoform gauze. Localized pockets of pus should be considered indications for an immediate operation, which may involve the uterine wall, the ovary, tube or peritoneum, and require the removal of the uterus or adnexa. Hysterectomy has been advocated and there are those who would do it in the majority of cases, but it is not only considered unnecessary by Montgomery, but frequently of no avail. Considering the rapid invasions by micro-organisms of all the tissues, it is useless. In the early stages the elimination of poison is promoted by the employment of intravenous injections of normal salt solution, and in the later stages it is a valuable means of support.

104. **Craniotomy.**—Krusen notes the unfavorable opinions as to the performance of craniotomy, but concludes that the life of the mother must be the first consideration. There are frequent conditions where it is justifiable. There is little doubt but that Cesarean section and symphysiotomy, except by an experienced physician with competent assistants, would sacrifice two lives instead of one. Circumstances alter cases.

126. **Alcoholic Intoxication and Hemolysis.**—From an experimental study on rabbits, Abbott and Bergey conclude: "1. The daily administration of alcohol per os to rabbits brings about a reduction in their circulating blood of the hemolytic complement. 2. Slight alterations in the normal alkalinity of the blood serum have no demonstrable influence on the (hemolytic) complement of the blood of alcoholized rabbits. 3. The diminished reactivating power of the blood of alcoholized rabbits is not due to the presence of small amounts of alcohol as such in the blood. 4. The administration of alcohol to rabbits induces not only a marked reduction in the complement content of their blood, but may cause, at the same time, a reduction in the specific hemolytic receptor in the blood of rabbits artificially immunized against an alien blood. 5. The diminished complement content of the blood of alcoholized rabbits renders the animal more susceptible to the toxic action by an alien blood."

132. **Serum Diagnosis.**—Sailer reviews in this article—which probably will be followed by others—the reaction between pathogenic micro-organisms and the blood serum of infected animals, noticing the Widal reaction. the reactions of the allied colon group bacilli and other micro-organisms of this group such as *Bacillus mesentericus*, *Bacillus febris gastrica*, and the bacillus of psittacosis and the bacilli of Sanarelli and Havelburg. He thinks the dysentery bacillus is also a member of the colon group, but the agglutinating reaction of some of these mentioned is not yet definitely decided. The plague bacillus agglutination has been of some value, but difficulties are

experienced on account of a sort of spontaneous agglutination which occurs. Little practical work has been done with that of cholera, probably because cholera is not epidemic among Western nations as in former years. Considerable experiment has been made for the agglutinating reaction of the tubercle bacilli that can be used clinically and Sailer gives the results. It seems hardly yet satisfactory for diagnostic purposes; it is of value only when positive, and its absence does not exclude tuberculosis. Other microbes mentioned are those of pneumonia, Malta fever, tetanus, etc. The mechanism of agglutination is not yet satisfactorily explained. The theories and researches are briefly noted. As regards the hypothetic substance by which agglutination is brought about, especially the so-called agglutinin, it has never yet been isolated. Too little is known about it to draw any conclusions excepting that in its reaction it seems to appear more resistant to ferments and that two substances are necessary in order to manifest its action. Sailer thinks it is well with our present knowledge to refrain from giving it any name that presupposes a separate identity.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), August 30.

1 On Direct Endoscopy of the Upper Air-Passages and Esophagus; Its Diagnostic and Therapeutic Value in the Search and Removal of Foreign Bodies. G. Killian, M.D.
2 A Case of Papillomatous Excrescences, Ozænic Incrustations, or Chalky Deposits, or Other Lesion Low Down in the Trachea. E. Law, M.D.
3 A Discussion on the Diagnosis and Treatment of Foreign Bodies in the Upper Air-Passages and Gullet. J. MacIntyre, W. Downie, W. T. Thomas, and Dr. Wild.
4 *A Simplified Method of Operating for Deflection of the Cartilaginous Septum. D. Grant.
5 Chronic Laryngitis; Correlation of Diagnosis and Treatment. N. C. Haring.
6 *The Connection of the Isolated Respiratory Fibers of the Recurrent with the Sympathetic and Cardiac Nerves. A. Onodi.
7 A Discussion on the Ultimate Results of Surgical Operations upon the Frontal Sinus and Maxillary Antrum. M. Lermoyez, H. Tilley, and Five Others.
8 On the Operative Cure of Laryngeal Papillomata. G. MacDonald.
9 *Bromide of Ethyl Anesthesia in Operations in the Throat. A. B. Kelly.
10 Moure's Operation for Deflected Septum. L. H. Pegler.
11 The Present State of the "Ozæna" Question. L. Grunwald.
12 A Discussion on the Etiology and Diagnosis of Ethmoidal and Sphenoidal Suppurations. L. Grunwald, H. L. Lack, and Thirteen Others.
13 Address by the President, Section of Otology. (Wm. Milligan, M.D.) The Study, Teaching and Prevention of Diseases of the Ear.
14 A Discussion on the Aims and Limitations of Intranasal and Surgical Procedures in the Treatment of Chronic Non-Suppurative Middle-Ear Disease. P. McBride, U. Pritchard, and Sixteen Others.
15 Remarks on Cholesteatoma of the Middle Ear. D. Grant.
16 On the Relation between the Formation of the Auricle of Anthropoid Monkeys and Certain Congenital Malformations of Human Auricle. F. Rohrer.
17 The Provision in London for the Education of the Deaf. A. Thorne.
18 The Treatment of Deafness of Middle-Ear Origin. C. Watson.
19 Remarks on the Anatomy of the Temporal Bone, with Lantern Illustrations. R. C. Elsworth.
20 Apparatus for Intratympanic Hot-Air Treatment of Certain Forms of Catarrh of the Middle Ear. Adolph Bronner.

Indian Medical Gazette (Calcutta), August.

21 The Postmortem Appearances in Cases of Asphyxia Caused by Drowning. Lieut.-Col. J. B. Gibbons.
22 Return of Sudden Deaths Requiring Coroner's Inquests for Five Years (from 1896 to 1900) in the City of Calcutta, with Remarks. Major C. R. M. Green.
23 Analysis of the Postmortem Examinations in the Murshidabad District During the Past Five Years. Lieut.-Col. T. G. Grainger.
24 Dilation of the Pupil in Chlorodyne Poisoning. A. Powell.
25 The Plague Commission on Haffkine's Anti-Plague Inoculation. N. H. Choksy.
26 Prevalence of Stone Amongst the Rice-Eating Population of Lower Bengal. Jadob Kisto Sen.

Hospitalstidende (Copenhagen), July 30 to August 20.

27 (No. 31.) *Fixation and Staining of Organized Urinary Sediments. P. Liebmann.—Om Fixering og Farvning af det organiserede Urinbundfald.
28 (No. 32.) Two Unusual Cases of Resection of the Intestines. S. Boysen.—Om to Tarmresektioner.
29 (No. 33.) Improved Hemoglobinometer. A. A. Meislin (Copenhagen).—Et nyt Haemoglobinometer.
30 (No. 34.) Experiences with Manipulative Reposition of Congenital Dislocation of the Hip-Joint. C. Lange.—Meddelelse om Behandlung af medfodt Hoftluxation ved ublodig Reposition efter Lorenz's Metode.

Annales de Dermatologie (Paris), July.

31 *Des altérations oculaires dans le xeroderma pigmentosum. A. Monthus.
32 Cas d'hémato-lymphangiome kystique superficiel développé sur la cicatrice résultant de l'extirpation d'un lymphangiome caverneux sous-cutané. U. Mantegazza.
33 *Results of Treatment of Lupus with Radium Rays. Danlos.—Lupus traité par le radium.
34 *Note sur l'emploi de l'adrénaline en photothérapie. De Beurmann.
35 *Traitement du prurigo de Hebra. De Beurmann.
36 Elephantiasis probablement d'origine syphilitique. Balzer.
37 Des accidents dus aux injections de cyanure de mercure dans le traitement de la syphilis. Barthélemy.

Revue de Chirurgie (Paris), August.

38 Fractures du tarse postérieur. E Destot.
39 *De l'actinomycose ano-rectale. L. Thevenot.
40 *Operative Reposition of the Head of the Femur. G. Gayet.—De la reposition sanglante de la tête fémorale dans les luxations irréductibles de la hanche, en particulier dans les luxations path. (Concluded from July number.)

Boas' Archiv f. Verdauungskrankheiten (Berlin), viii, 1 to 3.

41 (Von Leyden No.) *Intestinal Dyspepsia. Knud Faber (Copenhagen).—Ueber Darmdyspepsie.
42 *Occult Gastric Hemorrhages. J. Boas and A. Kochmann.—Weitere Beiträge zur Lehre von den occulten Magenblutungen.
43 Beiträge zur Antiperistaltik des Darms. J. C. Hemmeter (Baltimore).
44 *Ueber Heterochylie. G. Korn.
45 *Frequency and Heredity of Gastro-Intestinal Findings in Families. F. A. R. Jung (Washington).—Die Häufigkeit und Erblichkeit von Magen-Darmbefunden in Familien.
46 Hyperacidität. (Superaciditat, Hyperchlorhydria, Superaciditas chlorhydrica.) Eine klinische Studie. H. Illoway (New York).
47 Zucker (sugar), als solcher, in der Diät der Dyspeptiker. W. G. Morgan (New York).
48 (No. 3.) Ein Oesophagoscop. J. Schreiber (Königsberg).
49 Ueber Syphilis der Leber (Liver). Max Einhorn (New York).
50 Exaggeration of Reflex Spasmodic Effort to Vomit by Nasal Affections. Treitel.—Ueber die Steigerung des Würgreflexes durch Nasenleiden.

Centralblatt f. Chirurgie (Leipsic), August 9 to 23.

51 (No. 32.) *Puncture of Foreign Bodies. G. Perthes.—Ueber Fremdkörperpunktion.
52 (No. 33.) Rhinoplastik. Dreesmann.
53 (No. 34.) Zur Aetiologie der cong. Hüftgelenksluxation (Luxation of Hip-Joint). O. Bender.

Centralblatt f. Gynaekologie (Leipsic), August 9 to 23.

54 (No. 32.) Disinfectants for Obstetric Nurses. F. Ahlfeld.—Erganzungsblatt 3 und 8 zum Preussischen Hebammen-Lehrbuch.
55 Zur Verletzung der Vagina beim Coitus. Hermes.
56 *Complication of Pregnancy by Carcinoma of Rectum. Z. Endelmann.—Beitrag zum geburtshilflichen Verfahren bei Complication der Schwangerschaft durch Mastdarmkrebs.
57 (No. 33.) *Sterile Yeast for Vaginal Use. W. Albert.—Sterile Dauerhefe und ihre vaginale Verwerthung.
58 (No. 34.) Ein neues Speculum. A. Theilhaber. (Munich).
59 Was ist intraabdomineller Druck? O. Hagen-Torn.

Deutsche Med. Wochenschrift (Berlin and Leipsic), August 14.

60 *Technic and Results of Resection of the Ankle. F. König.—Methodik und Erfolge der Fussgelenksresektion.
61 *Bone Plastic Closure of Defects in the Skull. E. Hoffmann.—Ueber Verschluss von Defekten am knochernen Schädel durch der Nachbarschaft entnommene Knochenplättchen.
62 *Ueber einen Fall von Tumor der Cauda equina. F. Volhard.
63 Erythema simplex marginatum; 6 Fälle. L. Feilchenfeld.
64 Injury from "Praservesalz" (Sodium Sulphate). Kionka.—Ibid. Byk.
65 Favorable Report on Bismuthose. W. Lissauer.—Bismutose bei Diarröen kleiner Kinder; 30 Fälle.

August 21.

66 Determining the Outlines of the Heart with Actinoscopy. E. Grunmach and A. Wiedemann.—Ueber die aktinoskopische Methode zur exakten Bestimmung der Herzgrenzen.
67 Beiträge zur Frage der gegenwärtigen Verbreitung der Malaria in Nordwestdeutschland. P. Mühlens. (Concluded from No. 33.)
68 Sternum, Brust-Aorta und Wirbelsäule (Spine) im Roentgen-Bild. Max Levy-Dorn.
69 *Simultaneous Erysipelas and Scarlet Fever. P. Haller.—Rose und Scharlach, gleichzeitig bei derselben Person.
70 Medico-historische Miscellenen. T. Distel.
71 Beitrag zur Pneumonie-Statistik. E. Müller.
72 Ein einfacher Apparat zur Colpeurynter-Massage. Holz.
73 Electric Light Bath. Axmann.—Zum elek. Luftbad.

Klinisch-Therapeutische Wochenschrift (Vienna), August.

74 (Nos. 31 and 32.) *Thiocol and Sirolin. S. Drago.—Klin. exp. Untersuchungen über die Wirkung des Thiocols und des Sirolins.
75 Gastrische Crisen als erstes Symptom der Tabes Dorsalis. M. Lauterbach.
76 (No. 33.) Two Cases of Recovery After Putrid Affections of the Lungs. A. Weber.—Lungenabszess nach Fremdkörper; Lungenbrand nach Hufschlag gegen den Rücken.
77 *Ueber die Wirkung des Antistreptococcen-Serums. Tavel. (Commenced in No. 28.)

Muenchener Med. Wochenschrift, August 12.

78 *Study of Secretion of Hydrochloric Acid. M. Cloetta.—Zur Kenntniss der Salzsäuresekretion.
79 Ueber die Erzeugung hämolytischer Amboceptoren durch Serum-*Injektion.* P. T. Mueller.

80 *Zur Behandlung der sogen. "plastischen Induration" der Corpora cavernosa Penis. E. Galewsky and W. Hübener.

81 *Obstetrics in Case of Contracted Pelvis. Krönig.—Geburtsleitung beim engen Becken.

82 Ueber ein neues Abführmittel, "Purgatin." K. v. Hösslin.

83 * Infectious Diseases. G. Kös- Beziehungen der Chorea minor

84 Turpentine in Typhlitis. M. Mayer.—Erfahrungen über die Anwendung von Terpentinöl und verwandten Mitteln bei Blinddarmentzündung.

85 Fatal Hemorrhage in Bursa Omentalis Simulating Acute Intestinal Occlusion. K. Grassmann.—Tödtliche Blutung in die B. o.

86 Zur Toxikologie des Phosphors. K. Stich.

87 Zur Cystoskopischen Technik. F. Schlagintweit.

88 Zum Schwinden der Patellar-Reflexe bei Pneumonie. H. Lüthje.

89 Martial's Satires on the Profession. T. W.—Ein alter Aerztefeind.

Janus (Amsterdam), August.

90 The Neux Family in Surgery. P. Dorveaux.—La rasse des Neux, maitres chirurgiens de Paris.

91 Pathologisches aus Alt-Peru. R. Lehmann-Nitsche.

92 Studies in History of Medicine in Russia. Lachtin (Moscow).—Studien über die Geschichte der Medicin. (Commenced in No. 7.)

Giornale della Accademia di Medicina (Turin), June-July.

93 Sopra un caso di Leucanemia. G. Mattirolo.

94 Su la sutura zygomatico-maxillaris. B. Nicola.

95 Experimental Study of Intoxication with Carbon Monoxid. C. Foa —Ricerche sul sangue avvelenato con ossido di carbonio

96 Ricerche sull'azione chimico-fisiologica dei nucleoistoni e dei nucleoproteidi. A. Herlitzka.

97 Sul momento di rotazione del muscolo flessore superficiale del dito medio rispetto all' articolazione interfalangea. Z Treves.

98 Sulle alterazione istologiche della cheratosi pilare. S. Giovanni.

99 Gastrophilus Equi. E. Perroncito.

100 Coccidium jalinum ed il microsporidium polyedricum Bolle nel uomo (in Man). E. Perroncito.

101 Contributo allo studio dell' immunizzazione per l'arsenico. L Scofone and A. Brinda.

102 L'acido fosfocarnico nella sostanza cerebrale. A. Panella

103 Unusual Arrangements of Muscles. V. Serafino.—Regio genu posterior

Medicinskoe Obozryenie (Moscow), lvii, 3 to 8.

104 (No 3) *Contusions of the Kidneys. Sarytcheff.—O podkozhnykh povrezhdeniyakh potchki

105 K etiologii aneurism aorty. Segaloff.

106 (No 4) Patologo-anatomie pri tetaniya. Tchernysheff.

107 Value of Suprarenal Extract in Rhino-laryngology. Radtzikh Ekstrakt nadpotchetchnikov v rino laringologii.

108 (No. 5) Operative Treatment of Rupture of the Uterus During Delivery. Uspenski.—O chir. lyetchenii razryvov matki vo vremya rodov

109 Phototherapy. Tzyekhanski.—Svyetoletchenie

110 Theoretic Foundation for Phototherapy Spetoff.—Teoretitcheskiya osnovaniya lyetcheniya svyetom.

111 Stain for Milk and Blood. Vysotzki.—K okraskye mokroty i krovi.

112 (No. 6) *Cause and Treatment of Alveolar Pyorrhea. Znamenski —Alveolyarnaya piorreya.

113 Tuberculosis of Bladder and Prostate. Cohn.—O bugortchatkye motchevova puzyrya i predstatelnoi zhelezy.

114 (No 7) Cancer of the Pancreas. Bazhenoff.—O rakovom novoobrazovanii v podzheludotchnoi zhelezye.

115 (No. 8) Two Cases of Cholesteatoma in the Middle Ear. M. M. Resser —O cholesteatomakh srednova ukha.

116 Differentiation of Inflammation in Antrum of Highmore with Stein's Needle. Dempel.—O raspoznavanii Highmoritov pri pomoshtchi iglii Steina

117 Two Cases of Elephantiasis Due to Syphilis Pokrovsky.—Dva slutchaya slonovosti v zavisimosti ot syphilisa.

Rousskii Vratch (St. Petersburg), May to August.

118 (No 20) Study of Development of Throat Based on Case of Congenital Anomaly. N. A. Batueff.—Articulatio hyothyroidea anomala cong.

119 *New Sign of Tetany. A. I. Solovieff.—Phrenicus-phaenomenon.

120 (No. 21.) *Stab Wounds of the Abdomen. B K. Finkelstein.—O pronikaiushtchikh kolotoryezanykh ranakh bryushnoi polosti. (Commenced in No. 18.)

121 (No 22.) Study of Ovarian Cysto-Adenomata. D. D. Popoff.—Proiskhozhdenie sosotchkovykh kistoadenom i novye dannya v polzu paraophoralnova utcheniya. (Commenced in No. 21.)

122 *Differential Diagnosis of Appendicitis in Women. M. I. Rostovtzeff.—*Peritiphlit u zhenshtchin.* (Commenced in No. 20.)

123 Action of Toxins on Unicellular Organisms. B. V. G. Korentchevski.—Dyeistvie yadov na odnoklyetotchnykh zhevotnykh (Commenced in No. 21.)

124 (No. 23.) Chronic Prostatitis. C. Posner.—Raspoznavanie etc. chron. vospaleniya predstatelnoi zhelezy.

125 *Suprapubic Lithotomy in Children. P. Tikhoff.—O vysokom kamnisyetchenii v dyetskom vozrastye. (Concluded from No. 22.)

126 Leprosy in Astrachan. V. A. Virshillo.—Prokaza.

127 (N a Metabolism of Alcoholics. A. V. Pel. veshtchestv u alkoholikov.

128 (Test for Uric Acid. A. Y. Kalatchnikoff.

129 *Malaria in Turkestan. S. A. Mark.—Iz nablyudenii nad malariei v Turkestan. (Concluded from No. 21.)

130 (No. 26.) Syphilis of the Heart with Marked Dilatation of Pulmonary Artery. K. E. Wagner.—Slutchai siphilisa serdtza. (Concluded from No. 25.)

131 (No. 27.) Diphtheria and Diphtheria Bacilli in Scarlet Fever. I. A. Shabad.—Diphtheriya i diphth. palotchka pri skarlatinye.

132 Prophylaxis of Syphilis. Z. Y. Eltzina.—K voprosu o rassherenii myer borby s siphilisom.

133 Cadaveric Rigidity of Dead Fetus in Uterus. L. A. Gusakoff.—O trupnom okotchenyenii unershikh utrobnykh mladentzev.

134 (No. 29.) Influence of Toxins of Diphtheria and Tetanus on the Elements of the Blood. G. G. Kurkharzhevski.—O vliyanii diphtheriinova i tet. tokcinob.

135 Transplantation of the Cornea. G. I. Suroff.—K voprosu o peresadkye govoritzy.

136 Present Status of the Question of Bovine and Human Tuberculosis. H. H. N. N. Mari.—Sovremennoi sostoyanie voprosa o cootnoshenii bugortchatki tchelovyeka i zhevotnykh. (Concluded from No. 27.)

137 (No. 30.) *Operation for Epispadia. A. A. Muratoff.—K voprosu ob obrazovanii muzhskoi uretry y bolnoi epispadiei, soedinnoi s rasshtcheplenlem lonnova soedineniya.

138 Experiments with Toxin of Glanders.—A. M. Maksutoff.—Malleo-toksina.

139 Casuistic of Extragenital Syphilis. M. A. Tchlenoff.—K kazuistikye vnyepolovova syphilisa.

140 (No. 31.) *Pathogenesis and Treatment of Eclampsia. V. V. Stroganoff.—O pathogenezye i lyetchenii eklampsii. (Commenced in No. 27.)

141 *Acetonuria in Gynecologic Affections. M. P. Krivoshein.—K voprosu ob acetonurii pri zabolyevaniyakh zhenskova polovova apparata.

142 Experimental Study of Death After Injection of Foreign Blood. L A. Tarasevitch.—O smerti immunisirovannykh zhevotnykh.

143 Nineteen Cases of Inguinal Hernia Operated on According to Roux. V. I. Hedroitz.—19 slutchaev korennoi operatzie bedrennoi gryzhi po sposobu prof. Roux. (Commenced in No. 28.)

144 (No. 32.) *Intrarectal Urethral Plastics in Gynecologic Practice. V. S. Gruzdeff.—*Uretroplastika po ideye Subbotina v gyn. praktikye.*

145 Quantitative Determination of Alexins in Human Serum. G. A. Guseff.—K voprosu o kol. opredyelenii aleksinov v syvorotkakh lyudei.

146 *Pathology and Treatment of Progressive Deafness. M. V. B. Berezovski.—K voprosu o pat. i therapii narostayushtchei glukhoty. (Commenced in No. 30.)

4. **Septal Deflection.**—The method here suggested by Grant is a combination of portions of two other methods and consists in: 1. Cocainizing both sides of the septum. 2. Straightening and transfixing with the needle. 3. Administering nitrous oxid gas. 4. Cutting through the cartilage by means of Moure's shears, horizontally below the deflection, then obliquely in front of it and above it, parallel to the ridge of the nose, the incisions not meeting below and in front. 5. Manipulating the cartilage at the incisions so as to encourage overriding. When the deflection is accompanied by any considerable degree of thickening this should be shaved off beforehand, preferably at an interval of a couple of weeks, though it may be done at the time.

6. **The Laryngeal and Cardiac Nerves.**—Onodi has investigated the course and connections of the cardiac fibers in the sympathetic and finds an extraordinarily intimate relation which he describes as follows: "The connection of the superior laryngeal nerve with the upper cervical ganglion of the sympathetic and with the rami cardiaci superiores, which arise from the latter, is known, as is also the connection of the superior laryngeal nerve with the lower cervical ganglion of the sympathetic; the connection of the external branch of the superior laryngeal being much closer with the upper cervical ganglion of the sympathetic and the superior cardiac cervical. The external branch of the upper laryngeal nerve sends off a direct cardiac branch of connections to the upper cervical ganglion of the sympathetic and to the upper cardiac nerve. These anatomic conditions form in man an exact analogue to the depressor nerve found in animals. In regard to the inferior laryngeal we know its connections with the upper cervical ganglion of the sympathetic and with the superior cardiac nerve. Of great significance is the observation of Lenhossek, according to which the inferior laryngeal nerve arises from a ganglion, whilst the ganglion stands in connection with the pneumogastric by means of a thin root. The lower laryngeal is connected with the lower cervical ganglion of the sympathetic, and further, with the cardiac branches, which take their origin from the middle and lower cervical sympathetic. . . . It is known that in the trunks of the sympathetic besides the vasomotor and trophic, there are cerebrospinal, sensitive, and motor fibers. My investigations have shown that the cerebrospinal nerve fibers of the rami communicantes run in the trunk of the sympathetic according to a well-defined system. In the

upper part of the thorax and in the neck the larger part of the cerebrospinal fibers of the sympathetic run upwards and only a smaller part downwards, whilst in the rest of the thorax and in the abdomen just the reverse is the case. The sympathetic constitutes the morphological basis in the known connections for the course of the fibers and their intercommunication, as they are of different origin and different destination. Physiology has until now shown the presence of the depressor fibers and the cardiac branches originating from the upper laryngeal nerve, and my experiments have shown that in the dog the irritation of the sympathetic trunk between the lower cervical and first thoracic ganglion, as also of the communicating branches of the brachial plexus, will produce a retraction of the vocal cords of the same side. Beyond these observations the morphologic facts mentioned have received no pathologic or physiologic explanation. I may in particular draw attention to the intimate connection before mentioned which exists between the isolated respiratory nerve fibers of the lower laryngeal nerve and the sympathetic and the cardiac branches. The morphologic foundation is laid in the before-mentioned single facts, showing an exchange of nerve fibers of different origin and destination, but the isolation of these fibers and the investigation of their destinations still forms a subject the difficult solution of which is reserved for future physiologic and pathologic inquiry."

9. **Ethyl Bromid.**—This anesthetic has been used by Kelly 1200 times in tonsillotomy and operations for adenoids, polyps, etc., almost all in young persons or children. He insists on attention to the respiration during the administration, not prolonging the operation by repeating the dose over twice or thrice, and the use of a pure article. Its advantages are enumerated by him as follows: "No special apparatus is needed for its administration, narcosis is rapidly produced, the vapor does not irritate the respiratory mucous membrane, the upright position of the patient is permissible, there is quick return to consciousness, the after-effects (vomiting excepted) are unimportant or nil, and the danger is insignificant. . . . Another advantage which will commend itself to those who can not always obtain the services of a skilled anesthetist is that the administration can be superintended by the operator, who, sitting facing the patient, is in the best position to note the progress of the narcosis. As a time-saving agent bromid of ethyl is invaluable in dispensary practice. I have often operated on six or seven patients in forty or fifty minutes, and with organized assistance a dozen cases might be undertaken in an hour, as is accomplished by De Roaldes." Its disadvantages are the frequent impurities and the instability of the drug, the persistence of muscle tonus and the rather frequent after-vomiting. In adults the occasional after-excitement is also a disadvantage. Kelly says, however: "By virtue of its safety and convenience bromid of ethyl is entitled to a place among the anesthetics in daily use. Its position is between nitrous oxid and chloroform, ether, etc. Although handier than nitrous oxid, the latter, on account of its almost absolute safety, should be preferred when very brief anesthesia will suffice. On the other hand, chloroform, ether or one of the various mixed anesthetics should be resorted to when prolonged narcosis is necessary. A single administration of bromid of ethyl gives anesthesia lasting on an average a minute and a half, and this in conjunction with other qualities of the drug render it, I believe, the best anesthetic we at present possess for the removal of tonsils and adenoids."

27. **Fixing and Staining Sediment of Urine.**—Liebmann recommends a mixture of 2 gm. methylene blue dissolved in 100 gm. of a 10 per cent. solution of formalin. Two to four drops are dropped into the centrifugalizer tube, on top of the sediment, and left a few minutes. The tube is then filled up with water and left a while for the salts to dissolve, then centrifugalized again, when the formed elements are ready for the microscope. The results are exceptionally fine and durable.

31. **Ocular Alterations in Xeroderma Pigmentosum.**—Monthus mentions that about a hundred cases of xeroderma pigmentosum are on record. The frequency of the development of the lesions in the region of the eye attracts attention. These ocular lesions range from pigmented patches, dystrophic lesions and telangiectasia to benign and malignant tumors. The first manifestations of the affection may appear in the region of the eye, and malignant evolution is particularly rapid in this locality. In two cases recently observed by him, the xerodermic alterations included tumors of the lid and cornea, ectropion and xerodermic lesions of the conjunctiva in one case and in the other both lids were affected, with pannus of the right eye and epithelial tumor in the other. The patients were sisters, 15 and 13 years old. He describes both cases in detail. Treatment can be only prophylactic and symptomatic. Prompt and total extirpation is indicated in case of neoplasm of the lid, conjunctiva or cornea. Panas has demonstrated that ablation of the tumor and cauterization of its point of implantation will usually suffice, without necessity for enucleation of the eyeball.

33. **Results of Treatment of Lupus with Radium Rays.**—Danlos has treated five cases of lupus with the rays generated by radium. The results were remarkably favorable and there is evidently a future for this method of treating lupus when radium becomes less rare and expensive than at present. The plate of the metal was applied directly to the skin and one case of old inveterate verrucose lupus was completely transformed after nine applications. The verrucose protuberances have entirely disappeared without leaving a trace and have been replaced by a smooth cicatrix of good appearance. The radium was applied seven times for twenty-four hours at each sitting. It was applied once for 72 hours at one point and again for 120 hours at another and both these points developed a typical *x*-ray ulceration which has persisted for six months, with lancinating pains. The skin of the parts treated also became so stiff that flexion of the joints of two fingers has become impossible. The radium was estimated at 19,000 units of activity. In another case radium of the same strength was applied once for 36 hours to symmetrical lupus of the cheeks on a man 50 years old. The patch treated was modified by the application in striking contrast to the rest of the lesion around. Under the radium there is now a smooth, superficial, thin cicatrix while elsewhere the lupus exhibits the usual reticulated, swollen aspect. Another patient developed an ulceration which healed after a comparatively short time under the application of plantain leaves which also proved beneficial in another case. In still another patient the contrast is equally striking between the smooth white uniform cicatrix on the small patch covered by the plate of radium and the cheloid roughnesses around it. Danlos' first attempts with radium of weak power had the same prompt curative effect, but recurrence soon followed, while with sheets of 2500 and 19,000 power there has been no recurrence to date, more than a year in some cases. Curie states that radium of 1,500,000 power is obtainable. Brief applications of about 19,000 seem most promising. The rays emitted by the radium are evidently a combination of cathode and *x*-rays. As the cathode rays can be deflected by a magnet, it may be possible to eliminate them, if they prove to be the cause of the ulcerations. Brocq endorsed Danlos' communications as a great advance in the treatment of lupus. The results are cosmetically as favorable as those obtained by phototherapy or scarifications while the course of treatment is very much shorter than the former.

34. **Adrenalin in Phototherapy.**—De Beurmann has found that the application of a 1 per 1000 solution of adrenalin allowed the application of phototherapy without the necessity of a compressor to expel the blood from the part. The sitting lasted an hour and the blood did not return to the part during this time.

35. **Treatment of Hebra's Prurigo.**—De Beurmann has had a patient under observation for seven years, a typical case of this affection. He recently commenced treating him after the failure of all other measures by the daily and permanent application of a salve made of 12 parts camphor, 15 parts tar, 8 parts sulphur, 3 parts chaulmugra oil and 62 parts vaselin. The improvement has been astonishing, the skin has become flexible and the patient is freed from his discomfort.

39. **Ano-Rectal Actinomycosis.**—Thevenot reviews 15 cases of ano-rectal actinomycosis. Three of the patients are temporarily cured; 7 have died and 1 has been under treatment for three years. None was permanently cured. He warns against prolonged surgical procedures, curetting, scraping, etc., in deep, extensive actinomycosis with cavitation. Intervention should be limited to opening the abscesses; anything further merely whips up an otherwise torpid process and hastens the fatal termination. Death is due to the protracted suppuration and also probably in part to some specific intoxication from the ray fungus.

40. **Operative Reposition of the Head of the Femur.**—Gayet tabulates the details of 29 cases of reposition of traumatic luxations and describes 7 others of pathologic luxations including one in his own experience. Operative reposition of old and irreducible luxations he considers an excellent method of treatment which has established its usefulness and should take rank as the classic method of treating such cases. It is not in itself a serious intervention while the results far surpass those obtained by other means. Restoration of function is sometimes ideal, almost always with mobility allowing a nearly normal gait. It prevents shortening of the limb or remedies it if existent. External incision along the trochanter is generally ample, contrary to the general opinion. The same rules apply to pathologic luxations consecutive to acute diseases, the lesions in them resemble remarkably those of traumatic lesions. On the other hand, in the luxation of hip disease, operative reposition is rarely indicated on account of the general condition, the alteration of the bones and the danger of rearousing a slumbering process, but it may prove useful in a few special cases. He describes the technic, etc.

41. **Intestinal Dyspepsia.**—Faber believes that a certain form of well-developed and persisting dyspepsia originates in disturbances in the intestines, although the symptoms are usually attributed to the stomach. He describes three cases in which there had been constipation for some months, either neglected or treated with laxatives. It was followed in time by symptoms of dyspepsia, cardialgia, eructations, anorexia, nausea and vomiting, with severe nervous symptoms, headache, depression, insomnia, and in one case vertigo. These symptoms had lasted for several months to eight years. Efforts to treat the stomach were abandoned as the motor and chemical functions were found to be normal, and the patients were placed on a diet rich in cellulose with small doses of castor oil at bedtime. The rapid and complete abolition of all the symptoms confirms the assumption that the dyspepsia was exclusively intestinal. Fat heavy foods induced cardialgia in these cases as in gastritis. In 2 other cases the symptoms were practically the same, but there were also indications of hyperacidity, which vanished with the other symptoms when the intestinal functions were regulated. The hyperacidity he believes was due to reflex action from the deranged intestines. This assumption is confirmed by the fact that the same clinical picture is observed in cases of tape-worm, which causes the same symptoms above described. The burning, gnawing feeling of hunger localized in the stomach and developing a few hours after a meal, supposed to be characteristic of hyperacidity, is also characteristic of the presence of tenia. It vanishes completely with the expulsion of the worm. He examined the gastric secretion in 11 cases of patients with tenia saginata. In 5 the secretion was normal, in 6 it was excessive. In 4 of the latter the expulsion of the worm restored conditions to normal. The other 2 were probably not long enough under observation for the drop in the secretion to be noted. The hyperchlorhydria in case of a tenia is evidently due to the mechanical irritation of the large creature in the intestines, as he noticed in several instances that it diminished remarkably after the expulsion of a large portion of the worm, although the head remained. It increased again parallel with the continued growth of the worm. He has repeatedly noted that administration of filicis in such cases, to expel the parasite, has no effect *per se* on the secretion in the stomach. The gastric symptoms in all these cases should not be ascribed to the stomach any more than every case of headache and vertigo should be ascribed to a cerebral affection. He adds that fully one-half of all cases of dyspepsia are intestinal. In Denmark all obscure cases are diagnosed as catarrh or ulcer of the stomach; in other countries they are referred to nervous dyspepsia or neurasthenia. The physician should inspect the stool of his patient or instruct him how to examine them for indications of constipation, erosions, etc. An actual gastric affection must be excluded before incriminating the intestines exclusively. Pains in the stomach immediately after a meal are more suggestive of ulcer, while those induced by the intestine can be in the same place and fully as severe, but they do not occur until several hours afterward, as a rule. The localized pain in the latter case is lower down. The physician should seek to discover and remedy the primary cause for the constipation. If one can not be found he should be guarded in his prognosis. Faber has a number of times observed obstinate constipation as the initial and for a long time the only symptom of a carcinoma of the stomach. Nerve strain is a frequent cause of constipation and the dyspeptic symptoms develop more readily in such subjects. Milk and milk dishes and laxatives should be avoided. The patient should be warned to guard against recurrence of the constipation and especially hard, knobby stools. He should resume at once the small doses of castor oil on retiring, supplemented, possibly, by a daily enema of oil or water, and eat stewed fruits and Graham bread, etc. The intelligence of the patient is, therefore, an important factor in the permanent cure. A milk diet is a valuable guide as it aggravates intestinal dyspepsia, while it benefits gastric affections.

42. **"Occult" Gastric Hemorrhages.**—The Journal published (Vol. xxxvi, p. 1670) Boas' communication in regard to the presence of minute admixtures of blood with the stomach contents or feces, only to be detected with the Weber test for blood. He never found the blood in cases of gastritis anacida or subacida, nor with hyperacidity, hypersecretion or benign ectasia. On the other hand, these "occult hemorrhages" were occasionally detected in cases of ulcer of the stomach and consecutive stenosis of the pylorus, and they were found constantly in all cases of gastritis with stenosis and of carcinoma of the stomach. Further experience with 257 cases investigated has demonstrated that occult hemorrhages are extremely important as an aid for the diagnosis of carcinoma in dubious cases. He affirms that the constant absence of minute hemorrhages in the stomach or stools, with more or less normal motor function and absence of hydrochloric acid findings, can be accepted as evidence against a carcinoma, and may differentiate a chronic anacid ulcerative gastritis or other lesion which may otherwise present the same clinical picture. The discovery of these occult hemorrhages may also serve to warn of impending serious hemorrhage which may be averted by appropriate treatment. They occur in three conditions, in cases of ulcer, of carcinoma and of severe, non-malignant motor disturbances, both periodical and permanent. The greater the motor function the less the hemorrhages as a rule. Error from hemorrhage due to the introduction of the sound or other cause can be avoided by investigating the feces.

44. **Heterochylia.**—This is the term applied by Hemmeter to the suddenly varying condition of the gastric secretion, from normal acidity to hyper- or an-acidity, which occurs principally in nervous dyspepsia. Korn reports 12 cases observed at Boas' clinic. The variations in the secretion were of purely nervous origin in 11, although some of them were cases of gastritis or ulcer. In one the history was that of hyperchlorhydria, but repeated investigation after a test breakfast revealed anacidity. Einhorn has observed six similar cases. Korn suggests that possibly hyperchlorhydria was actually the rule, but that dread of the sound or other cause may have exerted an inhibiting influence on the secretion of hydrochloric acid. In case of its absence and suspicion of carcinoma, discovery of occult hemorrhages may decide the diagnosis.

45. **Frequency and Heredity of Gastrointestinal Findings in Families.**—Jung reviews 597 cases of gastrointestinal cases in his experience. Hyperchlorhydria was evident in about a third, and gastroptosis and enteroptosis (in women) in

about one-fourth; in men, about 3 per cent. Atony was noted in 10.7 per cent. He had occasion to examine more than one member in 40 families and in 65 per cent. the affection was duplicated. Out of 27 families with enteroptosis, repeated cases occurred in 48 per cent. Out of 25 families with superacidity, repeated cases occurred in 40 per cent. Out of 19 with subacidity, repeated cases occurred in 2 per cent., while in 19 families with normal acidity, it was found normal in 31.5 per cent. Thus an average of 23 families had duplicate cases of their characteristic gastric analysis. The average frequency of duplicate cases of all the affections mentioned was 34.5 per cent.

48. **Improved Esophagoscope.**—Schreiber illustrates the esophagoscope with which he has been very successful in the last few years. He inserts it with the patient seated and obviates the usual difficulty of obstruction of the view by mucus or other substances in the esophagus, by aspirating them through a small supplementary tube attached to the outside of the esophagoscope. By this means no time is wasted and he can proceed leisurely with his inspection of the walls. He uses a tube 10 to 15 mm. in diameter for adults.

51. **Puncture of Foreign Bodies.**—Perthes expresses surprise that no one has previously called attention to the valuable information to be derived in locating a foreign body by sticking a needle into it. He uses a lance-shaped needle about the size of a Pravaz, and after inspection with the fluoroscope, he inserts the needle until it touches the foreign body, and then leaves it as a guide for the operation. As soon as the shadow of the needle and of the foreign body remain in contact when the screen is moved around, there can be no further question as to the location of the foreign body and the needle leads directly to it.

56. **Pregnancy Complicated by Carcinoma of the Rectum.**—Endelmann was able to collect only 13 cases of this combination. In 7 the child was extracted by Cesarean section. The carcinoma tissue is very friable and 2 cases are known in which the soft parts involved in the encroachment of the neoplasm in the vagina were extensively lacerated during the extraction of the fetus, although very little force was used. Cesarean section is therefore preferable in some cases as easier and less dangerous than vaginal delivery. When the carcinoma is operable it should be removed as soon as possible. Petersen has reported a case in which the neoplasm was removed by resection of 14 cm. of the rectum after six months of pregnancy. Abortion followed the fourth day and death the fifth. The operative wound was infected in this case. Small tumors situated low down can probably be removed without danger or trouble. Under other circumstances it is advisable to terminate the pregnancy regardless of its duration, before undertaking the removal of the neoplasm. The hyperemia of the organs in the small pelvis would certainly favor hemorrhage more than in non-pregnant subjects, while the fetus would be compromised by so severe an operation as removal of a carcinoma. He induced abortion in a case of this kind at the seventh month. The patient was a iii-para, 32 years old. The child died an hour after colpeurynter delivery. After complete recovery, nearly two months later, the carcinoma in the rectum was removed according to Rehn's vaginal method and the patient made an uneventful recovery. Three similar cases have been published.

57. **Sterile Yeast for Vaginal Disinfection.**—Albert reiterates his former assertions in regard to the great value of yeast as a "physiologic disinfectant for the vagina." Obstinate vaginal discharges and erosions of the portio diminished at once and were completely cured in the course of five or six injections in nearly every case. The vagina restored to normal conditions, it is easy to cure the entire genital catarrhal affection by cauterizing the interior of the uterus throughout with a 30 to 50 per cent. solution of formalin. His experience has been extensive with this method of treating genital catarrh and he has always found it extremely satisfactory. He also uses yeast to disinfect the vagina preparatory to operations on the genital organs or a laparotomy. It is injected and left for twelve hours and rinsed out immediately before the operation. This spares the patient the ordinary preparatory measures which are always more or less annoying. It also saves the epithelium of the vagina from the injury of the vigorous disinfecting measures otherwise in vogue, and reduces the danger of hemorrhage as there is none of the usual resulting hyperemia of the parts. The subject must recline while the yeast is working, and for this reason it is usually preferable to make the injection at night. He prefers the "sterile Dauerhefe" or permanent yeast put up by Anton Schroder, Landwehrstrasse 45, Munich, for less than 75 cents per 100 c.c. Albert reports that 62 women prepared for laparotomy and 53 for operations on the vagina were disinfected with this yeast and the results were strikingly favorable, especially in case of colporrhaphy.

60. **Technic and Results of Resection of the Ankle.**—König refers to a work recently published in Langenbeck's *Archiv* by one of his former assistants, Mass of New York, reporting the results of 200 operations on the foot and ankle. In 80 the intervention was along the lines advocated by König, and in the 44 followed for several years the patients can all walk, with a usable foot. He thinks that such favorable results are conclusive testimony in regard to the value of his method of intervention. By far the largest majority of the bone foci occur in the astragalus and most of these are located in or near the head. Synovial tuberculosis also usually develops on the anterior aspect of the joint. For these reasons he makes two long incisions on the lateral front aspect of the ankle, 2 to 2.5 cm. long, extending nearly to the margin of the internal and external malleoli and downward to the scaphoid on one side and to the sinus tarsi on the other. This allows ample access to the astragalus and it can be entirely removed if necessary and the adjoining bones scraped or slices chiseled off. He drives the chisel entirely through the bone before separating the slice to be taken off. This is much easier in diseased bones than on the cadaver. Tuberculous lesions in the adjoining tendon sheaths are easily removed by this method. After the resection the wound is sutured, leaving a short drain or scrap of gauze on each side and the foot is then placed at a right angle and wrapped in a bandage that soon stiffens (Moospappen) forming a shoe which is left for two or three weeks. After the drains are removed, a plaster cast is applied and left as long as possible.

61. **Bone Plastic Closure of Defects in the Skull.**—Hoffmann has used his method a number of times in the clinic and thoroughly tested it on animals. The soft parts are pushed back from the edge of the defect on one or more sides, including the periosteum, exposing the bone for 2 or 3 cm. A piece 1 to 4 cm. square is then chiseled out and applied to the defect with the outer, smooth side in. If there are fragments of bone left from the traumatism or other cause of the defect they can be utilized if sure of asepsis, otherwise not, as plenty of aseptic bone material is at hand around the lesion. The soft parts are replaced and oiled silk applied. The smoothness of the side of the bone turned toward the dura and its shape are important factors in the smooth healing. He describes a case of old traumatism of the skull in a boy, treated by this method, with complete success.

62. **Differentiation of Tumor in Cauda Equina.**—Volhard remarks that only one case is on record of a successfully diagnosed and operated tumor in the cauda equina. The symptoms were two years of pain strictly localized in the middle of the sacrum, with pain on pressure, the rectus femoris on both sides weak and emaciated, transient paresis of bladder and intestines, diminished tendon reflexes and sexual functions, tendency to decubitus on one side, lumbar kyphosis, slight motor disturbances, sensibility intact. Laquer diagnosed a neoplasm in the sacral canal compressing the cauda, and Rehn found on operating a cavernous lymphangioma extending from the middle of the sacrum into the spinal canal and compressing both cauda equina and dura. The symptoms in the present case commenced with disturbances in micturition and sexual functions, dilatation of the bladder and secondary pyelitis, with secondary dyspeptic disturbances, dryness of the skin and mucous membranes, slight loss in sensibility, motor disturbances in the

left sciatic domain, abolition of reflexes except knee-jerk and cremasteric reflex and lax paralysis. The onset of the trouble was very slow and gradual. A benign neoformation of the cauda equina close to the conus was diagnosed and operation decided on, but the patient postponed it a few days while he attended to some business. When he returned fresh acute nephritis had developed and intervention was no longer possible, and he died with symptoms of uremia. The autopsy disclosed as anticipated a glioma close below the conus, compressing the roots of the cauda against the lumbar vertebræ. Volhard gives in elaborate tabulated form a comparison of the symptoms of this portion of the spine.

69. **Erysipelas and Scarlet Fever in a Single Subject.**—Haller assumes that the erysipelas and scarlet fever in the case observed could not have been both caused by the streptococcus. He thinks it is absurd to suppose that part of the streptococci could have devoted themselves to inducing scarlet fever and part to the erysipelas. He observes that the two diseases seemed to have a reciprocal attenuating action on each other, which corroborates the assumption that an intercurrent erysipelas may have a favorable influence on another disease.

74. **Thiocol and Sirolin.**—Thiocol is a derivate of guaiacol, and sirolin is its syrup preparation. It possesses the properties of guaiacol without its disagreeable by-effects. It is a soluble powder, the ortho-guaiacol sulphate of potassium, and clinical experience is demonstrating its great value in the treatment of tuberculosis. Drago, besides testing it in the clinic, has been conducting experimental research with it on dogs. The results demonstrated that thiocol increases the number of red corpuscles and the proportion of hemoglobin. The leucocytes increase at the expense of the polynuclears. The thiocol further enhances the alkalinity of the blood, the serum albumin progressively increases in amount and it has an unmistakably favorable influence on the organic chemistry in general.

77. **Action of Antistreptococcus Serum.**—Tavel reports the course of 46 cases of various affections treated with antistreptococcus serum produced at the Institute for Research on Infectious Diseases, at Berne, of which he is director. He immunized the horses by injections of cultures derived from severe infections in man, phlegmons, otitis media, ostitis nasi, puerperal fever, gangrenous erysipelas, appendicitis, etc. He used new cultures without passages through animals, which Marmorek considers indispensable, but which he thinks are not logical. The serum was applied in 11 cases of puerperal fever, 12 of erysipelas, 8 of pneumonia, 1 of appendicitis, 4 of staphylococcus infection, etc., a total of 46 cases. He attributes the recovery in many cases to the prompt use of the serum which proved eminently beneficial in some but was absolutely ineffective in others of the same disease. The effect was marked in a case of recurring erysipelas which had led to elephantiasis of the thigh and scrotum. The attacks recurred at times nearly every week, accompanied by high fever, the affection dating from 1892. Serum treatment was instituted in 1900, and 10 c.c. of the serum were injected as a prophylactic measure every fortnight and the dose repeated when symptoms of recurrence developed. The recurring attacks became gradually more and more attenuated and the intervals longer, the general health much better. There has been no recurrence since December, 1901, and the general health is highly satisfactory. The effect of the serum was remarkable also in some cases of meningitis, but it failed in another case complicated with erysipelas. In 3 cases of old streptomycosis of the lungs, the effect of the serum was promptly beneficial, and it proved brilliantly successful in 2 cases of phlegmon. 1 of an appendicular abscess, and 1 of metastatic infection after an angina, with rheumatism, endocarditis and nephritis. No remedies in the latter case had accomplished any results, but the temperature began to decline at once after serum treatment was commenced and subsided to normal after the third injection. Another case of puerperal metastatic infection was notably improved. Tavel's experience indicates that the streptococcus serum has a favorable influence even on staphylococcus infection. The variability in its action is still a mystery. Is it due to a lack of cytases, of leucocytes or merely to a lack of amboceptors which it may be possible for us to supply?

78. **Effect of Milk or Meat Diet on Secretion of Hydrochloric Acid.**—Cloetta describes the results of experiments on a litter of puppies fed exclusively on milk with a little iron, or exclusively on raw meat. The milk dogs seemed to thrive a little better than the others. They were all tested for hydrochloric acid at regular intervals and the findings were constant, that there was complete absence of the acid in the milk dogs while the others showed constantly about 2.5 per 1000 free hydrochloric acid after a test meal. They were shot when eleven months old and the gastric mucosa carefully examined. No anatomic differences could be detected between the stomachs of the dogs that had never secreted hydrochloric acid and those with copious secretion. The practical results of these experiments are the assumption that milk diet will have a tendency to diminish an excessive secretion of hydrochloric acid in man, but that it is hopeless to expect an anatomic regeneration of the hyperfunctioning mucosa, as the anatomic conditions are the same with or without acid production.

80. **Treatment of Plastic Induration of Corpora Cavernosa Penis.**—Galezewsky was consulted by a patient who complained of pains from an induration in the corpora cavernosa, so severe during erection that he was almost impelled to suicide. He had acquired syphilis in youth and was 47 years old at the time. Specific and local treatment proved ineffectual, and in spite of the danger of further trouble from cicatricial contraction, the lump was removed through a longitudinal incision, and the defect obliterated by lengthwise catgut stitches, over which the skin was sutured with silk. The patient was freed from all his pain and disturbances and the effect has been unimpaired for almost three years. The cause was probably some slight traumatism, as a similar induration started at the point where compression was applied to the organ for twenty-five to thirty minutes during the operation. It soon subsided spontaneously or in consequence of the sitz baths ordered.

81. **Delivery with Narrow Pelvis.**—Krönig compares the results attained at various French and German lying-in hospitals, and shows from the figures that prophylactic version, premature artificial delivery and the high application of the forceps have failed to show as good results as have been obtained without them. Many cases triumphantly reported as successes of premature delivery or prophylactic version might have terminated in spontaneous delivery, as others under exactly similar circumstances proceeded under expectant treatment to a spontaneous termination. The size of the pelvis is not everything—the comparative size of the fetal head must be taken into account. He believes that the best results will be attained when the obstetrician is content to wait and watch the course of events without interference. When expectant treatment has terminated in the absolute conviction that the disproportion between the fetal head and the size of the parts prevents normal delivery, then he should choose the mode of intervention as indicated, bearing in mind that symphysiotomy almost invariably leaves an elastic cicatrix which enables the parts to stretch in future childbirths and thus prevents further trouble from this source. The chief drawback is that the operation does not guarantee a living child as it is merely a preparation for natural delivery, while with Cesarean section the child is extracted at once.

82. **Purgatin.**—Hösslin corroborates the favorable reports on purgatin that have been published from the clinics of Ewald, Stadelmann and Ebstein. He found it a mild purgative which does not act for twenty-four hours or more, but then seems to empty the bowels completely, softening all the scybala. No by-effects were noted in any case in his experience.

83. **Etiologic Relations Between Chorea and Infectious Diseases.**—Koster found in 90 out of 121 cases of chorea minor, that is, 74.3 per cent., that there was a preceding history of some infectious disease or affection or traces of such in the tonsils and heart. Five of the other patients were hysterics and 3 over 35 years of age scarcely belong to the

domain of chorea minor. It dated from a fright in 9 others. These and the others were all of pronounced neuropathic tendency. Chorea is evidently due, he thinks, to an individual predisposition. A slight cause, trauma, fright or mild infectious disease, even a catarrhal fever, follicular tonsillitis, bronchitis or rheumatic affection may induce it in the predisposed. He seldom if ever encountered it in children from well-to-do families.

104. **Contusion of the Kidneys.**—Sarytcheff states that 18 cases of subcutaneous injury of the kidney have been published by Russian surgeons and he has had an experience of 5. One patient fell from a height on an iron fence, striking on his left side, and one was injured in a fight. Both were drunk at the time. A third fell on a wooden fence. They were treated merely symptomatically, with repose, applications of ice, ergot, codein, morphin and Haller's elixir, with clinical recovery and dismissal the seventh to the thirty-sixth day. The fourth patient fell from a platform and was unconscious for two hours. She was a healthy ii-para. The injury to the kidney was so severe in this case that after the soundness of the other kidney had been determined by cryoscopy, the injured organ was partially resected. The fifth patient was also a woman, 27 years of age, and sustained the contusion by falling from a ladder. An operation was indicated, but she refused to permit it and left the hospital in eleven days with still persisting hematuria. The symptoms in all these cases were pain in the region of the injured kidney and hematuria. There was no rigidity of the abdominal wall which has sometimes been observed. He remarks that rising temperature at first does not necessarily mean suppuration in or around the organ. The diagnosis of injury of the kidney was confirmed by the cystoscope. He recommends a prompt exploratory incision as a harmless means of determining the extent of the injury. Progressive anemia in such cases indicates that one or more blood vessels have been injured, and swelling suggests the development of a pseudo-hydronephroma or hematoma. All his patients recovered. He gives a cut of the microscopic findings in the one kidney that was removed. There was no subcutaneous hemorrhage in any of his cases and shock was noted only in two. The hematuria did not cease in one of the cases treated symptomatically until the twenty-seventh day after the injury. He recommends his practice of partial instead of complete nephrectomy, leaving a portion at least until the other kidney has acquired compensating power.

112. **Cause and Treatment of Alveolar Pyorrhea.**—Znamenski gives a number of illustrations of various phases of the anatomic process in alveolar pyorrhea, to sustain his assertion that the lesion in the bone in these cases is essentially an ostitis rareficiens. Different general pathologic processes, constitutional diseases and disorders may lead to atrophy of the alveoli. In mild cases when only a portion of the bone is involved and the marrow is still intact, ordinary hygienic and disinfecting measures suffice, but in the severer cases the bone must be scraped and a general tonic or specific general treatment instituted. He recommends as a prophylactic measure the chewing of the crust of hard bread or similar substances, as a gymnastic exercise for the bones, gums and teeth.

119. **Phrenic Phenomenon, New Symptom in Tetany.**—Solovieff has observed in two patients a hitherto undescribed symptom in tetany. His attention was attracted to it by complaints of palpitation and it was noticed that the lower interspaces on the left side were drawn in rhythmically, corresponding to the heart-beats. Radioscopy revealed that the left half of the diaphragm contracted simultaneously with each heart-beat while the right half was passive and moved only as pulled by the contraction of the left side. The resulting symptoms and slight bruit were observed in a second patient on the third day after admission to the hospital, but they vanished again by the following day. The patients were youths, 16 to 18 years old.

120. **Stab Wounds of the Abdomen.**—Finkelstein proclaims that the prognosis of a simple stab wound of the abdomen is very favorable. In 132 cases in his experience 70.4 per cent. of the patients recovered with no symptoms indicating injury of an internal organ. In Hoxie's experience, 53.2 per cent. of 47 cases, and in Tanzcher's, 59 per cent. of 46 recovered without complications. In Finkelstein's 39 complicated cases the intestines were injured in 15, the liver in 13, stomach in 6, mesentery in 3 and the spleen in one, while in another several organs were injured. When the condition of the internal organs can not be decided by a laparotomy, the prognosis should be guarded, as symptoms of peritonitis may not appear until the fifth to sixth day, especially in case of injury of the stomach. When the diaphragm was injured some viscus was also injured in 25 per cent. of the cases. The danger of consecutive hernia should be averted in such circumstances by suturing the wound if in the left side of the diaphragm. The left half of the liver was involved in 77 per cent. of all cases of injury of this organ. Hemorrhage was copious in 84 per cent., but in 16 per cent. the lesion occurred without causing symptoms. There was no escape of bile after tamponing in 64 per cent. Out of the 13 patients whose liver was injured, 5 died. He considers the tampon the quickest and most reliable means of arresting hemorrhage, but he finds on reviewing the communications of 17 authors on the subject that suturing was found effective in deep and copiously bleeding wounds of any part of the liver. It increases the possibility of suppuration, however, and must be supplemented occasionally by tamponing to arrest escape of bile. In case of injury of the stomach, the first days may elapse with no indications that an internal organ has been injured. When the operation is not undertaken until after the appearance of symptoms of peritonitis, the prognosis is unfavorable. The posterior wall of the stomach was injured in 16 per cent. and should be inspected at every laparotomy done for a stab wound of the abdomen. In 6.6 per cent. of the cases in which the intestines were injured there were no indications of the lesion during the first days. Peritonitis usually developed symptoms in twenty to twenty-four hours. Only one patient recovered out of 7 operated on after the signs of peritonitis were observed, and only 6 out of the total of 14 cases of intestinal complications operated on. The proportion of recoveries after injury of the large intestine was much larger than when the small intestine was involved. Only one recovered out of the 3 with injury of the mesentery. It caused profuse hemorrhage in each case. The general mortality of his 132 cases was 18 per cent., while for the uncomplicated cases it was only 5.3 per cent. and for the complicated, 53.8 per cent. Death was due to shock in 3; in one of these the stomach was wounded and in the others there was no complication. Prompt laparotomy is indicated, without waiting for the development of symptoms. Finkelstein describes a number of his cases with details.

122. **Appendicitis in Women.**—An appendicitis may simulate or mask a salpingitis, etc., or vice versa, but as the indications are the same for each, differentiation before operating is not very important. But during the operation disastrous results may follow if an inflamed appendix or tube is overlooked and left while operating on another lesion. He describes several puzzling cases and states that cases of appendicitis are on record in which the pain was referred to the left side, while salpingitis may occur exclusively on the right side. He gives a cut of an enormously swollen tube on the right side, simulating appendicitis, while the appendix crowded up beyond it was intact. General peritonitis due to appendicitis was invariably fatal in his experience, irrespective of surgical intervention, while a number of cases of general peritonitis originating in the genital organs, terminated favorably. The pain is located higher up, usually, in appendicitis than in salpingitis, and the onset is more sudden and severe. The resulting diffuse peritonitis is naturally more serious.

125. **Suprapubic Lithotomy in Children.**—Tikhoff gives the details of a dozen cases of urinary calculi in children which he operated on. Four were 2 years old, and 4 between 10 and 14. He proclaims that the Razumovski method is peculiarly applicable in these cases. The chief feature of the method is the fastening of the bladder to the anterior abdominal wall.

This not only favors cicatrization but aids in hermetically closing the wound in the bladder. The absence of buried sutures prevents the future development of stones around a suture. The cystopexy enables the wound in the bladder to heal completely in seven or eight days, free from oozing of urine with all its consequences. It shortens the post-operative period even in cases in which the suture was not complete, and it also enables the wound to be opened again if necessary. No special instruments are needed for it. Razumovsky has formulated the indications for this intervention in adults and they apply equally well to children. The only contraindications are an extremely poor general condition and severe nephritis. Tikhoff concludes by reiterating that the Razumovsky method is a most valuable acquisition for the surgical treatment of urinary stone affections in young and old.

129. **Malaria in Turkestan.**—Mark's extensive experience with malaria in various districts of Turkestan showed that the cases of tropical or meridian fever were eight times more frequent in the southern, tropical portions than in the hill country with a temperate climate. He believes that there are three kinds of malarial parasites which form two groups, those which can develop only in a tropical environment and those which grow in a temperate climate, the tertian and quartan. The type of malaria prevalent in a locality therefore depends on the climate of the place. Tuberculosis assumes a more rapid course under the influence of malaria. He reviews the recent literature on the subject of malaria and describes a number of exceptional cases of malaria from his experience with 161 patients.

137. **Operation for Epispadia.**—Four large cuts give a better idea of the operation performed by Muratoff than any verbal description and we refer those interested to the original. The task was to form a male urethra out of the well-developed labia of an apparent female. The patient had always been troubled with incontinence of urine. One of the steps of the operation was to form a flap out of the upper portion of the hymen.

140. **Pathogenesis and Treatment of Eclampsia.**—The Journal has frequently quoted Stroganoff's views in regard to the infectious character of eclampsia, xxxi, p. 1190, and elsewhere. He now presents arguments against the uremic theory and the theory of infection from the fetus, among them the fact that out of 126 cases of eclampsia in his experience in the last five years he has observed 10 cases occurring in the early months of pregnancy in which, after the cessation of the eclamptic seizures, the pregnancy continued to a normal termination. This could scarcely occur if the eclampsia were due to toxins generated by the fetus. Another argument is that the eclampsia which occurs in the first months of pregnancy affords usually the worst prognosis. He has lost only 8 out of the total of 126 cases, and in all but 2 of these fatal cases the eclampsia had developed before the patients were received in the maternity. He concludes with the statement that time has confirmed the efficacy of preventive measures as for any infectious disease, and of his method of treatment with administration of oxygen during the convulsions, controlling them with morphin and chloral, saline infusion and hastening delivery when convulsions do not yield to treatment. (See The Journal, xxxiv, p. 735, and xxxviii, p. 670.)

141. **Acetonuria in Gynecologic Affections.**—Krivoshein does not formulate any absolute conclusions from his researches on this subject as they are not sufficiently extensive. But he calls attention to the fact that fibromatosis evidently induces an acute deviation from normal in the oxidation processes, as established by the constant finding of acetonuria in this affection.

144. **Application to Gynecology of Intrarectal Urethral Plastics.**—Subbotin's method of treating exstrophy of the bladder by constructing a new bladder and urethra, with a sphincter, out of the rectum, was described and illustrated in The Journal of Jan. 18, 1902, p. 211. The permanent results in the two cases reported have been most excellent. Gruzdeff now announces that the operation is also applicable to certain gynecologic affections and describes a case of extensive vesicovaginal fistula with complete destruction of the urethra, which he succeeded in curing by this means. He slightly modified the technic described by Subbotin and commends this new operation to the serious attention of gynecologists as well as of surgeons in general. He describes his case and operation in detail, but without illustrations.

146. **Value of Strychnin in Treatment of Progressive Deafness.**—Berezovski announces that the subcutaneous administration of strychnin practically cured two patients with progressive deafness and annoying subjective sounds in the ears. It also attenuated or completely banished the sounds in 17 out of 22 other cases of various forms of aural affections. He remarks that he has never known in his own experience nor heard from others nor been able to find in literature a single instance of complete cure of progressive deafness by any means. Consequently he believes that the cure of the two cases he reports, even if they were only 2 out of 2000 instead of being 2 out of 2, should suggest further trials in this line. He has found strychnin useful also in amblyopia and other affections of the eyes. He injects the strychnin in the usual hypodermic dose. Other methods of administration proved ineffectual.

New Patents.

Patents of interest to physicians, etc., Aug. 19 and 26, 1902.

707089. Corn pad. Ira Duckworth, Fort Smith, Ark.

707508. Electric roller for massage and therapeutic purposes. John W. Gibbs, New York.

707423. Obtaining albuminous substances. Adolf Jolles, Vienna, Austria-Hungary.

707438. Medical electrode. George G. Marshall, Wallingford, Vt.

707445. Inhaler. John H. McCulloch, Newville, Pa.

707258. Leg-improver. Harry A. Rhonemus, Springfield, Ohio.

707282. Nebulizer. Charles Truax, Chicago.

707187. Rotary bake-oven. Frank H. Van Houten, Fishkill-on-the-Hudson, N. Y.

707562. Electrotherapeutic battery. Thomas J. Dunn, Jersey City, N. J.

707619. Hernial truss. Joseph H. McKague, Columbus Heights, Minn.

707623. Elastic anesthetic apparatus. Herman Nieriker, Zurich, Switzerland.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A Text-Book of Medicine. Begun by the Late Charles Hilton Fagge, M.D., F.R.C.P., Sometime Physician to Guy's Hospital, Completed After His Death and Since Revised or Rewritten by Philip Henry Pye-Smith, M.D., F.R.S., Fellow of the Royal College of Physicians. Fourth Edition in Two Volumes. Vol. II. Cloth. Pp. 1050. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

A Treatise on the Diseases of the Throat, Nose and the Associated Affections of the Ear. By Charles P. Grayson, M.D., Lecturer on and Instructor in Laryngology in the Medical Department, University of Pennsylvania. In One Octavo Volume of 540 Pages, with 129 Engravings, and 8 Colored Plates. Cloth $3.50 net. Lea Brothers & Co.: Philadelphia and New York. 1902.

Psychopathological Researches. Studies in Mental Dissociation with Text Figures and Ten Plates. By Boris Sidis, M.A., Ph.D., Director of the Psychopathological Laboratory. Published under the Auspices of the Trustees of the Psychopathic Hospital, Department of the New York Infirmary for Women and Children. Cloth. Pp. 329. Price, $3.00 net. New York: G. E. Stechert. 1902.

Manual of Bacteriology. Clinical and Applied. With an Appendix on Bacterial Remedies, etc. By Richard T. Hewlett, M.D., M.R.C.P., D.P.H. (Lond), Professor of General Pathology and Bacteriology, King's College, London. Second Edition. Cloth. Pp. 533. Price, $4.00. Philadelphia: P. Blakiston's Son & Co. 1902.

Jahresbericht über die Fortschritte in der Lehre von den Pathogen Mikroorganismen unfassend Bacterien, Pilze und Protozoën unter Mitwirkung von Fachgenossen bearbeiter von Dr. med. P. von Baumgarten un Dr. med. F. Tangl. Sechzehnter Jahrgang 1900. Paper. Pp. 812. Leipzig: Verlag von S. Hirzel. 1902.

Transactions of the Medical Association of the State of Missouri At Its Forty-Fifth Annual Session, held at St. Joseph, Mo., May 20, 21 and 22; 1902. Cloth. Pp. 269. St. Louis: Nixon-Jones Printing Co. 1902.

Transactions of the Thirty-second Annual Session of the Medical Society of Virginia, held in Lynchburg, Va., Nov. 5-7, 1901. Cloth. Pp. 330. Richmond, Va.: Williams Printing Co. 1902.

Transactions of the Arkansas Medical Society. Twenty-seventh Annual Session, held at Little Rock, Ark., May 13, 14 and 15, 1902. Paper. Pp. 201. Little Rock, Ark.: Tunnah & Pittard. 1902.

Die Roentgenstrahlen im Dienste der Chirurgie. Von Dr. Carl Beck, Professor der Chirurgie, New York. Book I and II. Cloth. Pp. 138. Verlagsbuchhandlung Seitz & Schauer. 1902.

Transactions of the Florida Medical Association. For the Year 1902. Held at Tampa, Fla., April 9, 10 and 11, 1902. Paper. Pp. 127. Jacksonville, Fla.: Garrett Printing Co. 1902.

Dr. Prassitele Piccinini. Farmacoterapia con formulario. Un volume di pag. viii-382, elegantemente legato in tela. Ulrico Hoepli. Milano. (L. 3,50.)

Proceedings of the Orleans Parish Medical Society. Issued June, July 1, 1902. Paper. Pp. 17 and 18, respectively. Published Monthly by the Society.

Army List and Directory. Officers of the Army of the United States. Aug. 20, 1902. Paper. Pp. 72. Washington: Government Printing Office.

Transactions of the Sixty-ninth Annual Session of the Medical Society of the State of Tennessee. Memphis, 1902. Cloth. Pp. 306.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 28 to Sept. 3, 1902, inclusive:

W. Edson Apple, captain, asst.-surgeon, U. S. Vols., honorably discharged from the service of the United States, to take effect Oct. 10, 1902, his services being no longer required.

Alexander P. Bacon, contract dental surgeon, U. S. A., now at Fort Clark, Tex., is relieved from duty in the Department of Texas and will proceed to Fort Yates, N. D., for temporary duty at that post.

William B. Block, captain and asst.-surgeon, U. S. Vols., as Captain Apple, above.

Henry L. Brown, contract surgeon, U. S. A., member of a board at Fort Sheridan, Ill., to examine candidates properly ordered before it as to their fitness for appointment as chaplains in the U. S. A.

Frederick J. Combe, major and surgeon, U. S. Vols., as Captain Apple, above.

Charles M. Drake, major and surgeon, U. S. Vols., now on leave of absence at Atlanta, Ga., as Captain Apple, above.

Vernon K. Earthman, major and surgeon, U. S. Vols., now on leave of absence at Murfreesboro, Tenn., as Captain Apple, above.

James D. Glennan, major and surgeon, U. S. A., on being relieved from duty at the U. S. Military Academy, West Point, N. Y., will proceed to Fort Douglas, Utah, to relieve Major Henry F. Hoyt, surgeon, Vols., U. S. A.

William C. Gorgas, major and surgeon, U. S. A., is relieved from duty at Havana, Cuba, to take effect Sept. 30, 1902, and will then repair to Washington, D. C., and report to the Surgeon-General for instructions.

Henry F. Hoyt, major and surgeon, U. S. Vols., as Major Combe, above.

Francis J. Ives, major and surgeon, U. S. A., as Surgeon Brown, above.

Henry S. Kilbourne, major and surgeon, U. S. A., member of a board at San Francisco, to examine officers of the Army for promotion.

Damaso T. Laine, major and surgeon, U. S. Vols., as Major Combe, above.

Louis M. Maus, lieut.-col., deputy surgeon-general, U. S. A., on his arrival at San Francisco, will proceed to West Point, N. Y., for duty at the U. S. Military Academy, to relieve Major James D. Glennan, surgeon, U. S. A.

Donald P. McCord, captain, asst.-surgeon, U. S. Vols., honorably discharged from the service of the United States, to take effect Sept. 30, 1902; leave of absence granted until that date.

T. C. McSwain, contract surgeon, U. S. A., leave of absence granted to include Sept. 30, 1902.

Charles B. Mittelstaedt, contract surgeon, U. S. A., detailed a member of an examining board at Fort Ethan Allen, Vt., vice Lieutenant Charles F. Morse, asst.-surgeon, U. S. A., relieved.

George J. Newgarden, captain, asst.-surgeon, U. S. A., relieved from further treatment at the Army and Navy General Hospital, Hot Springs, Ark., and will go to his proper station at Fort Mason, Cal.

William F. de Niederman, major and surgeon, U. S. Vols., as Major Combe, above.

George L. Painter, captain, asst.-surgeon, U. S. Vols., as Captain Apple, above.

Harper Peddicord, contract surgeon, U. S. A., now at Columbus Barracks, Ohio, will report for duty at that post.

Thomas L. Rhoades, lieutenant and asst.-surgeon, U. S. A., as Major Kilbourne, above.

D. M. Roberts, contract surgeon, U. S. A., leave of absence from the Department of Texas extended one month.

Charles A. Sturtevant, contract surgeon, U. S. A., is relieved from duty at Fort Slocum, N. Y., and assigned to duty at Madison Barracks, N. Y.

Ralph L. Taylor, contract surgeon, U. S. A., former orders which directed him to repair to Washington, D. C., amended so as to direct him to report to the commanding general, Department of California, for assignment to duty as transport surgeon on the transport *Warren*, to relieve Captain Donald McCord, asst.-surgeon, Vols., U. S. A.

Edwin P. Tignor, contract dental surgeon, U. S. A., leave of absence from the Department of the Missouri extended ten days.

William L. Whittington, major and surgeon, U. S. Vols., now at St. Joseph, Mo., as Captain Apple, above.

Robert E. Williams, captain, asst.-surgeon, U. S. Vols., as Captain Apple, above.

The officers of Volunteers, U. S. A., honorably discharged as above ordered are directed to proceed to their homes on receipt by them of their orders.

Navy Changes.

Changes in the Medical Corps of the U. S. Navy, week ending Sept. 6, 1902.

Surgeon N. H. Drake, detached from the Mare Island Navy Yard and ordered to the *Solace*.

Surgeon W. R. DuBose, detached from the *Solace*, on reporting of relief, and ordered home and to wait orders.

Asst.-Surgeon W. H. Ulsh, ordered to the Washington Navy Yard for examination, and thence home and to wait orders.

Medical Director R. A. Marmion, detached from duty as president of the medical examining boards, Washington, D. C., and ordered to duty as president of the naval medical examining board and to duty in charge of the Naval Museum of Hygiene and Medical School, Washington, D. C.

Medical Director G. P. Bradley, on completion of duty as a member of the board for the examination of midshipmen, detached from the Naval Museum of Hygiene, Washington, D. C., and ordered to duty as a member of the medical examining board and naval retiring board, Washington, D. C.

Surgeon R. M. Kennedy, detached from the *Franklin*, and ordered to the torpedo station, Newport, R. I.

Asst.-Surgeon J. J. Snyder, detached from the torpedo station, Newport, R. I., on reporting of relief, and ordered to the naval hospital, Philadelphia.

Surgeon E. O. Huntington, order of August 15, modified; detached from the naval hospital, New York, and ordered home in obedience to order referred to.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 6, 1902:

SMALLPOX—UNITED STATES.

California: Los Angeles, Aug. 16-23, 1 case; Sacramento, Aug. 16-23, 2 cases.

Colorado: Denver, Aug. 16-23, 2 cases.

Illinois: Belleville, Aug. 23-30, 1 case.

Indiana: Indianapolis, Aug. 23-30, 3 cases.

Iowa: Ottumwa, Aug. 2-30, 2 cases.

Kansas: Wichita, Aug. 23-30, 3 cases.

Maine: Portland, Aug. 23-30, 1 case.

Massachusetts: Boston, Aug. 23-30, 5 cases; Brockton, Aug. 23-30, 3 cases; Lawrence, Aug 23-30, 1 death; Somerville, Aug. 23-30, 2 cases.

Missouri: St. Joseph, Aug 23-30, 9 cases; St. Louis, Aug. 24-31, 12 cases.

Montana: Helena, Aug. 1-31, 1 case.

Nebraska: Omaha, Aug. 23-30, 2 cases.

New Hampshire: Manchester, Aug. 23-30, 1 case.

New Jersey: Camden, Aug. 23-30, 7 cases; Newark, Aug. 23-30, 4 cases, 1 death.

New York: New York, Aug. 23-30, 6 cases, 1 death.

Ohio: Cincinnati, Aug. 22-29, 2 cases; Cleveland, Aug. 23-30, 76 cases, 6 deaths; Hamilton, Aug. 23-30, 3 cases; Middletown, July 12-Aug. 9, 11 cases.

Pennsylvania: Erie, Aug. 23-30, 1 case; Johnstown, Aug 23-30, 12 cases, 1 death; McKeesport, Aug. 23-30, 2 cases, 2 deaths; Philadelphia, Aug. 23-30, 4 cases, 1 death; Pittsburg, Aug. 23-30, 12 cases, 5 deaths.

Wisconsin: Green Bay, Aug. 23-31, 3 cases; Janesville, Aug. 23-30, 1 case; Milwaukee, Aug. 23-30, 1 case.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, June 1-30, 3 deaths.

Austria: Prague, Aug. 2-16, 1 case; Trieste, Aug. 8-16, 1 case.

Barbados: *July 13-Aug. 12, 47 cases.*

China: Hong Kong, July 12-19, 1 death.

France: Paris, Aug. 2-16, 2 deaths.

Great Britain: Dundee, Aug. 8-16, 1 case; Glasgow, Aug. 16-23, 1 case; London, Aug. 8-16, 24 cases, 5 deaths.

India: Bombay, July 29-Aug. 5, 5 cases, 5 deaths.

Italy: Palermo, Aug. 2-9, 5 cases, 2 deaths.

Netherlands: Rotterdam, Aug. 16-23, 1 case.

Russia: Moscow, Aug. 2-9, 1 case; Odessa, Aug. 8-16, 2 cases, 1 death; St. Petersburg, Aug. 2-9, 4 cases.

Spain: Corunna, Aug. 8-16, 20 deaths.

Uruguay: Montevideo, July 9-23, 43 cases, 2 deaths.

YELLOW FEVER.

Columbia: Panama, Aug. 18-25, 1 case.

Costa Rica: Port Limon, Aug. 7-14, 1 case, 1 death.

Ecuador: Guayaquil, Aug. 8-16, 5 cases, 2 deaths—imported.

Mexico: Coatzacoalcos, Aug. 16-23, 5 cases, 1 death; Vera Cruz, Aug. 16-30, 33 cases, 4 deaths.

PLAGUE.

China: Hong Kong, July 12-19, 21 cases, 20 deaths.

Egypt: Alexandria, Apr. 14-Aug. 13, 72 cases, 35 deaths.

India: Bombay, July 29-Aug. 5, 32 deaths; Calcutta, July 26-Aug. 2, 11 deaths; Karachi, July 27-Aug. 3, 12 cases, 5 deaths.

Madagascar: Tamatave, July 6-22, 18 cases, 14 deaths.

CHOLERA—INSULAR.

Philippine Islands: Cebu, July 9-20, 90 cases, 52 deaths.

CHOLERA—FOREIGN.

China: Hong Kong, July 12-19, 6 cases, 5 deaths.

Egypt: Alexandria, Aug. 5-13, 8 cases, 7 deaths; Cairo, July 22-Aug. 13, 556 cases, 490 deaths; Assiout Province, including Moucha, July 15-Aug. 13, 536 cases, 434 deaths; Behera Province, Aug. 12-13, 13 cases, 4 deaths; Beni Souef, Aug. 11, 1 case; Charkieh Province, July 12-13, 6 cases, 5 deaths; Galloubieh Province, Aug. 6-13, 20 cases, 11 deaths; *Gharbieh Province*, Aug. 13, 1 death; Guizeh Province, July 25-Aug. 13, 159 cases, 93 deaths; Menoufieh Province, Aug. 9-13, 6 cases, 6 deaths; Minieh Province, Aug. 9-13, 24 cases, 13 deaths.

India: Bombay, July 29-Aug. 5, 1 death; Calcutta, July 26-Aug. 2, 22 deaths; Karachi, July 27-Aug. 3, 21 cases, 21 deaths.

Japan: Osaka, and Hiogo, July 26-Aug. 9, 2 cases, 1 death.

Korea: Chenampo, Aug. 21, severe; North Korea, Aug. 21, severe.

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Address.

HOSPITALS FOR THE NEUROPATHIC AND PSYCHOPATHIC.*

CHAIRMAN'S ADDRESS, DELIVERED BEFORE THE SECTION ON NERVOUS AND MENTAL DISEASES, AT THE FIFTY-THIRD ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, AT SARATOGA SPRINGS, N. Y., JUNE 10-13, 1902.

RICHARD DEWEY, A.M., M.D.
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The development of institutions for nervous and mental maladies forms no exception to the rule that increased complexity (and perplexity) follows the process of finer adaptation to the requirements of advancing medical science and social evolution. Change and growth are so rapid that the conservatism which necessarily characterizes all institutions, keeps them lagging behind in the advances of the day in the art and science of both neurology and psychiatry.

It is not necessary to prove in this audience that there is in our own time a very great increase of nervous diseases, both in variety of forms and in the number of sufferers. The same is also true of mental diseases, and hence the subject of provision for patients of this class is a pressing one in all our communities. In this paper I seek to consider only hospital treatment largely for recent and curable cases. Thus far it has been principally only where mental integrity was impaired that separate provision has been made; as in the separate institutions for insane, the feeble-minded and the epileptic, and even these classes were, in the first instance, separated from the community only because they were a menace or an annoyance in the commonwealth, and not for their own welfare or for curative treatment. Considering for a moment the case of the psychopathic, the mere utterance of a few words will illustrate to you the history of provision for mental maladies. The terms "demoniac," "lunatic," "insane" and "psychopathic" correspond to the "jail, "asylum," the "hospital," and now, I may add (to coin a word), the "psychiatrium," or the "psychopathic hospital," which is growing up before our eyes. The word "Bethlem" is a history in itself. The "Bethlem Royal Hospital" in London began to receive the insane in the fifteenth century, and from that time until the beginning of the nineteenth it was a place of horrors and suffering inconceivable. Until a comparatively recent time it was visited by the public as a show or "menagerie," and, like the latter, was subject to a "stirring up of the animals" in their cages and a rattling of their chains for the amusement of the crowd. Even to-day something of this idea survives in the unenlightened mind. Though the day of the cell and manacle has passed by, and any physical restraint is now rather the exception than the rule, yet even fairly intelligent persons are heard to ask, when visiting an asylum, that they may be shown those who are, as they imagine, "chained" or caged up in their cells, and they sometimes seem incredulous when told there are no such. The difference between "Bethlehem," our Lord's birthplace, and "bedlam," the dwelling, or rather prison, of the "bedlamites," is no greater than that between the ideas of the masses and those which we, as specialists in the healing art, have learned to entertain.

Along with the most benevolent intentions, the masses, even of the medical profession, have but the faintest notion of what is required for the care of nervous or mental disease, and these latter for the very good reason that no adequate study or teaching of these maladies has obtained, or perhaps was possible until within recent years, and we have a work to do which is primarily educational, both for the public and for the masses, even of our own profession.

Taking now the matter of provision for the mental maladies as illustrating the process of development, it may be truly said, that it is only within 20 or 30 years that any conception has existed of the varying requirements of this class. Twenty years ago I published a paper in the *American Journal of Insanity* on "Differentiation in Institutions for the Insane," in which I urged that the epileptic, the criminal and the alcoholic cases required separate provision and removal from the general insane hospitals, so that the curable cases could be better cared for and the work better organized. At that time a single institution existed in our country for the criminal insane; there was none for the epileptic then, nor for many years after, and the cases of alcoholic and drug inebriety could only be cared for by being committed as insane to some public asylum (except the handful of such cases as could command private care), and when we consider, even to-day, how true it still is that these classes are unprovided for, we see how much there is still to be accomplished. Since then, and within very recent years, there has grown up a strong interest in and demand for special and separate care for the acute and curable insane, thanks to the efforts of enthusiasts for humanity and progress in the medico-psychologic and the neurologic associations of our own and other countries. Criminal asylums have been erected in many states, epileptic colonies and hospitals are rapidly springing up, a beginning has been made in the public care of the inebriate. The provision of convalescent homes for nervous and mental maladies has also been eloquently urged and brought to the attention of the profession and the public. Great improvements have been made in plan and construction of instiuttonsi by segregation in separate, suitable buildings admitting of better classification. Detention hospitals have been provided in most of the larger cities where acute cases could receive prompt, suitable and often beneficial treatment, pending further disposition of their cases. But, however much is done, we see still more to do and the constant necessity of better adaptation of means to ends.

Now, considering separate provision for purely nervous diseases, we see, on looking over the ground, that anything of the kind has scarcely an existence, if we except the private sanitariums, hospitals and nervine homes that have been provided for the well-to-do, and one of the saddest pages in contemporary medical history is that which tells of the great number of patients who are poor or slenderly provided with this world's goods, for whom there is no care or treatment available; "who have not where to lay their head"; who can not recover at home and will not go to a public asylum or hospital, and cannot afford the expense of private care.

Taking these private institutions and examining into the forms of nervous and mental disease there represented, we see that the neuropathic and the psychopathic are commingled in all of them in a manner that goes to show one of two things—either the two classes belong together to a great extent or else their separate needs are largely ignored. The consideration of the neuroses as distinguished from psychoses shows that the former have largely a psychopathic element in them.

Take hysteria, one of the most frequent. We are at once confronted with the fact that this neurosis is also a psychosis. The mental functions are almost universally affected in hysteria, and, in fact, many writers classify hysteria among the mental diseases. Next, neurasthenia presents itself, and we need only ask ourselves as to the mental state found in neurasthenia to recognize that a large number of cases exhibit decided mental aberration—melancholia is a most common accompaniment of neurasthenia. "Nervous prostration" is often only a polite misnomer for insanity. Another large class of neurasthenics in whom the phobias and obsessions are found, forms really a group of cases of mild delusional insanity. So-called hypochondria is often a mild insanity. Harmless paranoiacs are generally classed among nervous invalids and not with the insane. If they are well-to-do they go to a private sanitarium; if indigent, to the public asylum. Chorea is very generally accompanied by mental changes, as has been recently pointed out by Moyer.

The large class of persons addicted to drugs and alcohol forms an important group, and here we have patients in whom very often, in the practical sense, insanity exists when the culmination of the drug or alcohol habit renders medical care and treatment necessary.

Take now the extensive class of organic diseases affecting the brain or spine, or periphery, in which we do not ordinarily say the patient is insane—hemiplegia, paraplegia, brain tumors, neuritis. It is indisputable that in a large majority of these the mind is disordered and functional or organic insanity exists.

The toxemias, which produce neuroses, syphilis, metallic poisoning, uremic poisoning, the neural complications of heart and kidney disease and arterial disease are accompanied by psychic complications almost invariably. Again, autotoxic diseases from deranged metabolism affecting the nervous system very generally affect the mind.

Finally, consider epilepsy. So far as its objective effects and symptoms are concerned they consist largely in insanity. Most of such individuals, whenever they are sick at all, are sick mentally, but are practically sane in the interval.

The treatment of very many of these neurotic cases needs to be the same as of the psychoses, and a hospital suitable for the one would be suitable for the other. On the other hand, it seems to me that if the attempt were made to create a purely neuropathic hospital and admit to it only those who were strictly mentally sound, the positions of the physicians and nurses would be sinecures. At the same time, if all who were admitted sought the benefits of the establishment because it was supposed that insane cases were not there received, it would be a growing enterprise and require to rapidly increase its capacity, so great is the prejudice aroused by the name "insanity," though the same condition under the name of "nervousness" would arouse no apprehension.

And here I may be pardoned for a few words as to the conception of insanity generally held. What is insanity? I do not ask this question with a view of adding to the numerous remarkable definitions already published. I simply inquire what the word insanity means to the general mind, both lay and professional, and I answer; that while you and I know that the hysteric, the neurasthenic, the hemiplegic, the toxic and many other cases are insane in the sense that they are mentally diseased and psychopathic, they are not insane in the sense in which the general public, or even the medical profession at large, understands insanity.

Insanity to these means a wild, hallucinatory state; it means noise, violence, suicide, homicide, destructiveness, untidiness—everything that is repellant, everything that is irrational. While at the same time it is a fact that a third of the population of any institution for the insane are persons quite free from these characteristics and who would be suitable inmates of any hospital or nervine home, so far as their appearance, conduct or demeanor go, on the other hand, the delirium of fever or toxis, the harmless fancies of hysteria, the states marked by obsessions and phobias, and the melancholia of the neurasthenic and the hypochondriac, and the emotional weakness of the hemiplegic, are not insanity to the average mind. Nevertheless, these are in their essence to the neuropathologist the same as "mania," "melancholia" and "dementia," and the various forms of universally recognized lunacy. We know that there are those among the insane who are far more rational than others, who are simply classed as "neurotic," and *vice versa.*

This word insanity I devoutly believe is a source of unending confusion and error, and it would be well if it could become obsolete like its predecessor, "lunacy." Insanity means something entirely different to different people who use it. It is unforunate in its etymology and in the fact that more than any other word in common use it is understood so diversely by diverse persons. Its derivation is the latin *sanus,* which means healthy. *Insanus,* or "insane," means etymologically nothing more than "unhealthy." Further, its technical meaning is absolutely different from its meaning in general acceptance.

When a mother, whose gentle daughter has hysterical paralysis, or one whose gifted son is a harmless paranoiac, or a wife whose hemiplegic husband, still brilliant but blurred and emotional, asks: "Is he (or she) insane?" I answer, "No," with the mental reservation, "not as you or the world understands insanity," or I say, "It is a mild psychosis." Fine susceptibilities are not wounded by the word "psychosis." Again, the most palpable case of insanity, one which would be admitted as such by all the rest of the world, is not recognized as such by those nearest and dearest to the patient. The late Dr. Worcester, that keen observer, relates, in one of his observations, how a relative of a patient with most pronounced insanity, when the various convincing evidences were recounted, replied, "I know his mind is not right, but is he insane?" All this is a digression, but helps to illustrate the difficulty of separating the neuropathic and the psychopathic, and of reaching an agreement as to what insanity means and as to who is insane. And another illustration of the way in which insanity means one thing to the medical man and another to the world at large is found in the legal cases where insanity enters in as a question. The vagaries of courts and juries in criminal trials where the plea is insanity are only too familiar. The palpably insane are constantly punished as responsible and the sane criminal often escapes by means of the "insanity dodge." A recent striking illustration is given by Dr. Thayer, in his account of five palpably insane and irresponsible persons found guilty of murder in Maine in recent years and punished like fully responsible persons.

The repugnance to insanity grows in part out of the lingering prejudice surviving from the dark ages, when it was regarded as possession by the devil, and hence a disgrace to all concerned. It is also in other cases felt to be a disgrace because it is supposed to grow out of evil habits, or does, in reality, spring from such habits; but pneumonia, rheumatism, paralysis, Bright's disease, heart disease, which grow out of evil habits precisely as much, are not felt to be a disgrace. The fact of heredity in the general mind also increases the disgrace of insanity, and yet other diseases equally hereditary and equally disgraceful—that is, not at all—like arterio-sclerosis, consumption, gout, are not thought disgraceful and may even be pointed to with pride. Conditions precisely the same as those of insanity exist in other diseases, but are regarded in a wholly different manner. Fevers, surgical operations and the like, occur where the patient is as repulsive and as hard to care for as any insane case, and as disordered mentally, but these are looked upon only with commiseration and sympathy. Repulsive and helpless states growing out of delirium of fever, filthy and offensive conditions occurring in surgical or gynecologic states arouse no horror. The helpless victim of senile dementia need not be considered more repugnant than the swaddled infant. and yet is very differently regarded. Even violent and destructive acts growing out of crime, homicide or suicide, from unrequited affection or violent passion, are thought to be interesting and to have a certain sentimental attractiveness; while the same thing precisely supposed to spring from insanity is repellant to the last degree. This is largely due, as above stated, to the survival from earlier times of the feeling of disgrace attending insanity as a diabolical infliction or a punishment from heaven for exceptional guilt, when it is, in fact, only a disease like any other, differing solely in the fact that it invades brain tissue.

All of the above seems to me to be an argument for the disuse of the word "insanity," and for substituting the more accurate term "psychosis," as is generally done by continental writers, and I firmly believe we shall see a gradual but complete change in this respect.

Returning now to the question of neuropathic and psychopathic hospitals, I would say that as the matter presents itself to my mind, it is not by attempting to erect absolutely separate institutions and dividing, so to speak, the "sheep from the goats" (i. e., all the insane from all who are not so) that the best success may be attained. Such a division is in practice impossible. A hard and fast line cannot be drawn. Persons truly insane, as we understand the word, will always be euphemistically classed as "neuropathic" so long as the term "insanity" is in use, and others who are only neuropathic will be found among the insane as a result of chance, or choice, or necessity. In the public hospitals for insane, although the law erects a barrier and all who enter must be legally declared insane, we find the hysterical, the neurasthenic, the "habit" cases, the paralytic, the epileptic and scores of patients who are not so insane as the paranoiacs, melancholiacs, the paretics and the maniacs, who are numerous in our sanitariums and general hospitals.

There are certain exceptional cases of psychosis, or neurosis, which are harmful to others or for their own welfare, ought to be separated from association with fellow invalids—some temporarily, some permanently. They need special and segregated care, whether neuropathic or psychopathic. Such are all noisy, violent, destructive patients; also such as have an injurious moral influence; such as are repulsive in conduct or appearance. Some individuals of these classes are insane, some are primarily neuropathic and psychopathic at once, and one problem connected with their care is the fact that the objectionable conditions are often fleeting or paroxysmal and require changes of environment accordingly; so that their care is not suitably disposed of by simple incarceration, but requires changes in surroundings and treatment.

It has been taken for granted that association of nervous people with one another was necessarily injurious, and still more, that association with the insane would be disastrous. This is true if we take insanity in its popular meaning, but experience shows practically helpful and beneficial association daily going on, both in the wards of the insane hospital and the precincts of the neuropathic hospital or sanitarium. Even the administering of the rest cure has been claimed to require a private house other than the patient's home for best results, but that part of it carried on with the patient in room and bed would seem to be as well provided for in any well-arranged sanitarium or hospital as in a private house, and it is even possible, and in some cases certain, that the continuation of the treatment after the patient is up, may be more helpful for the associations and the social contact of other patients, provided these are suitably regulated. It is to be wished that more information were available on this point. A comparative study of cases of neurasthenia treated in institutions and in private houses would be valuable, particularly if embracing a long term of years and showing the subsequent history of each case.

As the matter presents itself to my mind, a public neuropathic or psychopathic hospital can be so arranged as to give suitable environment and association (or isolation where required) to the vast majority of both classes, without prejudice to either. I am now speaking only of public provision and discussing essentials and not the preferences or luxuries in which persons of abundant means can indulge.

The psychopathic hospital should be situated in the country, convenient to a good-sized city. In this view I differ from those who advocate a location in the city. Of course. rest treatment and care in bed are equally well in the city, but there is scarcely a psychopathic case able to be out of bed which will not be better for access to lawn and park and for the quiet of the country and for a place to go other than the city street. Of course, all details of sanitary location and construction are taken for granted. The territory should be ample, not less than an acre for each patient accommodated, so that agriculture could be carried on, and the grounds should be attractive. The capacity might vary from 50 to 150. There should be from four to eight buildings for classifying patients. It might be an independent institution or an annex to a larger hospital; the former being the preferable arrangement. One of the buildings should be so widely separated from the others and so arranged internally that the turbulent, noisy and destructive cases or stadia of insanity or delirium could there be cared for without disturbance or annoyance to those in other buildings. This latter building should be surrounded by trees and hedge-rows and have access to a thickly wooded grove. The internal arrangements should be such that patients who were temporarily noisy, violent and destructive would not annoy their neighbors. Where it were possible to have an additional building specially arranged for three to eight turbulent patients of each sex this would be an advantage. Even if these latter were not absolutely separated in another building, such patients could be well cared for without disturbing others, in specially constructed rooms with thick walls, lined with canvas padding, removable for renovation, with separate and specially arranged bathroom and plumbing and with double doors and windows opening on an inner court, and in which thorough ventilation could be secured by suitably located and protected electric fans.

It may be said that all of this turbulent, violent and noisy class should be in an absolutely separated institution, and such an arrangement would have its advantages. It would have, also, its disadvantage, that these violent conditions are often temporary, passing away in hours or days, and when they were over, a transfer would be necessary, and sometimes frequent transfers which would be much more difficult in case it were necessary to go back and forth to another and separate establishment. The epileptic, the periodic maniac, the alcoholic, the violent hysteric, and many nervous invalids not insane as ordinarily understood, would need such accommodation temporarily, hence I advocate the separate or turbulent ward as a part of the psychopathic hospital, knowing it is capable of being arranged so as to be no disadvantage to the other departments, and would be as useful for certain of the neuropathic as for the other class of cases.

I will not speak of the ordinary conveniences and well-known provisions required for nervous and mental cases, such as means of recreation and employment. means of hydrotherapeutic and electric treatment, a well-equipped laboratory, etc., or of a competent, adequate and skillfull medical and nursing staff. Each 25 patients of this class would well employ the energies of an enthusiastic and well-qualified physician, and to every five patients there should be, if possible, an average of one nurse. Some patients, of course, require one, or even two, constant nurses, others are able to do a good deal for themselves.

The other buildings comprising the psychopathic and neuropathic hospital need to be arranged only like any pleasant, comfortable dwelling. Twelve to thirty patients should be the limit in any one building. Some of the buildings should have only one sex; others both sexes in separate wings or floors. One building should be for those needing quiet and solitude. One for those who need sociability, music, games, etc. Congeniality and compatibility should be studied most sedulously, both of patients and nurses. I think one building with means of pleasant but complete isolation should be provided for those who constantly talk about and dwell upon their symptoms or vagaries or are mischievous and annoying to their fellow patients, thereby educating them in self-control and effecting a double benefit.

There is one important consideration in the organization of such an institution which relates to the question of commitment or manner of admission. If the psychopathic hospital, or "psychiatrium," were a public or a state institution, a large part of the neuropathic and most of the psychopathic might go voluntarily, as to any hospital, or in the same manner as to the public sanatoria for the tuberculous, or eye and ear diseases. Voluntary committment should be universally provided for, as is now done by statute in many states. In any case, where the patient's mental condition rendered action necessary irrespective of his will or perhaps in opposition to his wishes, or in cases where involuntary detention might become necessary in the patient's best interest during a state of delirium or irresponsibility, strict safeguards would be necessary to prevent any interference with personal liberty. A law establishing a psychopathic hospital might provide for "close" and "open" wards, and require a legal determination of the mental state, and an order of court for all persons received in the "close" ward or building, and, of course, all such institutions should be subject to visit and inspection systematically by the charity or insanity commissioners. A systematic inspection by sworn medical officers of the state who had expert knowledge of mental diseases might cover this ground. Of course, some difficulties would grow out of having persons, both psychopathic and mentally more or less normal, cared for in one establishment, but none which might not be met by well-considered provisions of the law. Heretofore all persons in the eye of the law regarded as insane have been supposed to be separated from other invalids, but the "eye of the law" has often been blind or affected with strabismus. Everyone familiar with the situation knows that taking institutions for so-called nervous troubles on one side and institutions for the insane on the other, there is in both a heterogeneous association of persons, both sane and insane, according to the point of view. The patients find themselves in one class or the other as a result of a thousand circumstances or chances; their financial circumstances, their own or their relative's willingness or unwillingness to have the official brand of insanity affixed, the emergencies arising from their condition. etc. In general, however, it may be said that of two persons exactly alike in condition, one well-to-do and the other poor, the former would escape a legal commitment and go to a private hospital or sanitarium, while the poor person would be subjected to judicial proceedings and placed in the asylum for the insane—a fact which, considering the superstition and prejudice existing in the public mind, would be a misfortune and a hindrance in the ordinary relations of life in a business and social way, and, although insanity by any other name is just as painful a circumstance, yet it would mean something less serious or detrimental to have gone to the "psychiatrium,' or even to have entered the "close" wards of such an establishment as is here in mind.

Regarding the nurses and attendants for the psychopathic hospital, it may be said that they should be trained or undergraduate nurses, and the standard of care should be such as the nearest and dearest friends of the patient would approve of and give if they were by the patient's side, provided, however, that such nearest and dearest ones were possessed of the wisdom and the harmlessness the scripture tells us of. Here, however, is a source of difficulty. We know but too well that friends and members of the families of those who are nervous and insane are often not judicious and are themselves apt to be unwise and mistaken in their views as to what is best for the welfare of the patient. Out of this fact grows the ancient superstition that friends and members of the family should always be separated from the psychopathic and often from the neuropathic patient. This also accounts for the opinion of attendants and physicians often expressed that the visits of friends do harm. The visits occasionally may be harmful, but there is a strong prejudice also in the minds of attendants and physicians on this subject. If a patient, who is subject continually to violent paroxysms, is visited by a friend and a paroxysm occurs after the visit. it is apt to be attributed to the visit. Sometimes it would have occurred irrespective of visits of friends; again the friends and relatives, lacking all thorough or trained knowledge of what is needful, are apt to form erroneous opinions, and trouble and inconvenience, and sometimes harm to the patient, grows out of this fact. The only remedy, however, is greater freedom and a gradual process of education of the laity. Certainly exclusion and a repellant attitude toward friends leads only to doubt and suspicion and defeats its own object.

Regarding the expense of construction of such hospitals, it is to be recognized that they would be somewhat more elaborate and expensive than the average public institution for the insane, but probably no more so than the average general hospital. It would probably cost about $1,000 per capita to erect them suitably, exclusive of the ground required.

I will endeavor to summarize my remarks by the following statements:

1. It is evident that there is great need of special hospitals where the neuropathic and psychopathic can receive treatment with the aid of all the advancement and skill of the present time. The neuropathic are, to a great extent. also psychopathic, but not insane as the word is ordinarily understood, although technically there is no difference between the psychoses of the neuropathic and what is medically termed "insanity," the difference being one of degree rather than of kind.

2. It is difficult or impossible in practice to place all the neuropathic in one group or location and all the psychopathic in another. They are inextricably comingled, the same persons frequently passing from one class to the other or belonging in both at once. The delirious, the maniacal, the epileptic, the frenzied. the auto- or hetero-intoxicated person of to-day is the quiet. rational. sane person of to-morrow, and many of the neuropathic are affected with psychoses.

3. If the turbulent, maniacal and otherwise objectionable patients are provided for in a wholly separate department, it is possible, where two separate institutions can not be afforded or maintained, to provide suitably for both neuro- and psycho-pathic on the same premises in detached buildings arranged for suitable classification. Constructive and administrative arrangements that are perfectly feasible would enable objectionable patients to be so located and so changed from time to time that appropriate surroundings will be provided for all.

4. The hospitals required may be either additions to existing institutions or separate establishments. The circumstances must differ in every community, and great flexibility will be necessary in the various arrangements according to members of different classes, location, means available, etc.

5. The word "insanity" has outlived its usefulness; it has no power as a definition in a technical sense, either medically or legally, and its popular use is confused and unsatisfactory. Etymologically the word is an absurdity. No acceptable definition of insanity has ever been formulated. "Psychosis" is a preferable term.

6. The legal questions relating to commitment to these hospitals would need legislative adjustment. Admission could be largely voluntary as to any hospital. Voluntary commitment as provided for legally now in many states of the Union would remove the difficulty in a large number of cases. It is understood no one should be under involuntary confinement without legal warrant, and suitable safeguards should be provided.

Original Articles.

ABSCESS OF THE LUNG FOLLOWING ACUTE LOBAR PNEUMONIA.*

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A decided impetus was given to the surgery of the lung in America by the paper of Bull in 1882 and the Address on Surgery by Murphy[1] of Chicago. This has been especially true of the surgical treatment of pulmonary abscess following pneumonia. When I selected this subject for my paper I was not aware that Eisendrath of Chicago was collecting statistics and working along the same lines. When, however, I began looking up the literature on the subject I found his most classical review[2] of "The Surgery of Pulmonary Abscess, Gangrene and Bronchiectases Following Pneumonia." The subject has been so carefully canvassed by him and the ground so thoroughly covered that I have been unable to find a single case of abscess of the lung not reported by him. I have therefore made free use of the material which he has collected and put in such excellent shape. In preparing the tables which follow this paper I have used his tables, simply eliminating the cases of gangrene, bronchiectases, probable tubercular abscess and abscesses following septic and traumatic pneumonia. I wish here to publicly acknowledge my indebtedness to Dr. Eisendrath and express my hearty appreciation of his painstaking, valuable work.

After eliminating the cases which I consider do not properly belong under the title of this paper, I find that he has collected in all 73 cases of "acute," "simple chronic" and "chronic putrid" pulmonary abscess, which, with my two cases, reported further on, make a total of 75.

The diagnosis of pulmonary abscess where the cavity is not surrounded by normal lung tissue should not be difficult. The history of an antecedent pneumonia with subsidence of the acute symptoms, followed by septic temperature with sudden expectoration of quantities of pus, then defervescence; more or less continuous purulent expectoration with exacerbations when the escape of pus is temporarily arrested, should lead one to strongly suspect this condition. The most valuable physical signs are dulness on percussion, large mucous râles and a metallic element in the sounds on auscultation and deep percussion. Bacteriologic examinations of the expectoration, revealing the pneumococcus and the pus-producing organisms with absence of the tubercle bacilli, in conjunction with the history and physical signs, make the diagnosis conclusive.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and [illegible] and approved for publication by the Executive Com[illegible] Walker, A. J. Ochsner and DeForest Willard.

[1] The Journal A. M. A., 1898.

[2] Philadelphia Medical Journal, Nov. 9,

The prognosis in cases of pulmonary abscess, that have persisted without marked improvement for more than four weeks, is so unfavorable under medical treatment that surgical intervention should be advised, when warranted by the patient's general condition. Cases not surgically treated grow more or less progressively worse until exhaustion or some intercurrent disease gives a happy release from suffering. The results of surgical treatment are most gratifying and growing progressively better as the operations are done earlier, more carefully and thoroughly.

My first case illustrates beautifully the immediate and continuous relief that may be obtained and the absolute restoration to health. My second case was a striking illustration of what the human organism can endure without great impairment of the vital organs and still retain its capacity to return to the normal when relieved of its burden. My experience in these two cases leads me to advocate opening the abscesses as low as possible, and in old cases much more extensive removal of ribs and diseased tissue. I should have done this in my second case except for the patient's miserable condition. He seemed almost moribund before completely under the anesthetic, and almost collapsed before I had completed even the simple operation of resection of short portions of two ribs. I believe this patient will also soon be restored to good health and the small existing sinus obliterated.

Later: Sinus closed; cure complete.

The following remarks on the pathology of pulmonary abscess, the physical signs prior to operation and the present condition of my two patients are by Dr. H. F. Harris, professor of pathology, Atlanta College of Physicians and Surgeons:

Abscess of the lung occasionally follows pneumonia, but it can not be said that it is a frequent sequel of this affection. It may result from either the common lobar pneumonia, or from the bronchial variety of the disease. As to the exact frequency with which this complication occurs there exists, so far as I am aware, no definite statistics, but that it is more frequent than is generally supposed there can be little question. This results from the fact that pneumonia may directly terminate in abscess, or this condition may come on some weeks after the individual has recovered from the acute pulmonary disease. When the latter occurs, there can be no doubt that our hospital statistics frequently fail to give a just idea as to the frequency of the complication, as under such circumstances the patient must frequently have been dismissed from the hospital before symptoms of breaking down of the lung were apparent, and doubtless many such instances have subsequently been regarded as tuberculosis following pneumonia.

As to the precise nature of the changes that occur in the lung when abscess begins to form as a sequel of pneumonia, we are in more or less ignorance; since, so far as I know, no one has made accurate histologic examinations at the time when the disease first developed. It is furthermore true that the exact conditions necessary to bring about this result are not as yet understood. It is assumed by some that this complication results from the presence of the pyogenic cocci, these acting together with the organisms that produce the pneumonic process. It, however, can hardly be doubted that the *micrococcus lanceolatus* is itself capable of bringing about a result of this kind under favorable conditions, and instances have been recorded where this bacterium was found in pure culture of the pus from abscess following pneumonia. Although, as before stated, the precise character of the histologic changes that occur in beginning abscess are not fully known, it is extremely probable that the tissues undergo alterations practically similar to those occurring in other parts of the body where abscess formation takes place. The pulmonary structures soften, undergo liquefaction and accumulate vast numbers of polymorphic nuclear leucocytes. These changes progress until an external opening is effected—this, in the vast majority of instances, being brought about by ulceration into a large bronchus and the expectoration of the abscess contents. After this occurs, it is probable that the size of the abscess does not further greatly increase, for if the patient does not quickly die, the cavity becomes walled off by newly-formed fibrous tissue in which, in old cases, lime salts may be deposited. Under such circumstances, the physical signs leave no doubt that the surrounding lung substance is never normal, but that a condition somewhat resembling broncho-pneumonia is constantly present. Although this state of affairs may continue even for years, the cases herewith recorded show beyond question that the lung may return to its normal condition after the abscess has been cured.

DR. HARRIS' COMMENTS ON THE TWO CASES.

Case 1.—P. R.—I examined this patient a short time before he was operated on and found, briefly, the following conditions; Patient is emaciated and pale. On inspection of chest the right shoulder is found to be considerably lower than the left, and neither on ordinary nor forced inspiration does the right chest expand to the same extent that is observed on the left side. On physical examination the upper and middle lobes of the right lung present no abnormalities, but extending from the third rib, where it joins the spinal column, downward and forward to the base of the lung in the right axillary line, there is dulness on percussion. On auscultation bronchial breathing is quite generally found along with a great number of small and large moist râles. Just beneath the lower angle of the scapula an area about two inches in diameter is found, in which on deep percussion a certain degree of resonance is elicited—the note produced having a distinctly metallic character. The "cracked pot" sound could not be elicited. On auscultation over this area the voice and the sounds produced in breathing are of a distinctly metallic character.

On May 26, seven months after the operation, this patient was again examined. Right shoulder is not perceptibly lower than the left and the chest expansion during inspiration almost normal. Percussion over the diseased area shows that there remains only a very slight degree of dulness, this evidently being the result of the thickened pleura. On auscultation, much to my astonishment, the vesicular murmur, even over the site of the wound, is absolutely normal and no râles are present.

Case 2.—Wm. W. R.—When first seen this man was greatly emaciated, very weak, and evidently extremely anemic. On inspecting the chest the left shoulder is found to be lower than the right and the left side of the thorax does not expand during breathing to anything like the same extent observed on the opposite side. On examination the upper lobe of the left lung is found to be normal, with the possible exception of its lower anterior border which may be involved in the diseased process that is present in the entire lower lobe. This, however, could not be made out with certainty on account of the great difficulties of making exact determinations in this particular locality. The lower lobe of the lung, beginning at a point where the 3d rib joins the spinal column and extending downward and outward to the lower border of the heart, presents dulness on percussion of a pronounced kind, and on auscultation bronchial breathing is everywhere heard, along with numerous moist râles. Outside the lower angle of the scapula and extending toward the spinal column, there is an area about four inches in diameter over which a distinctly metallic, tympanitic sound is produced on deep percussion. This, however, is not perceptible when the finger is tapped only lightly, there being under such circumstances merely dulness. The "cracked pot" sound could be elicited in a most striking manner. On auscultation the voice and the sounds produced in breathing are here found to be metallic in character, and it is noted that the pitch of the sounds produced in inspiration and expiration preserve their normal relationship, i. e., the expiration is of lower pitch than the inspiration.

This patient was again examined on May 25, about three months after the operation. The left shoulder is not quite on a level with the right, but does not drag downward to anything like the same extent observed before the operation. The chest expansion of the left side is not yet normal, but there is a decided improvement over the condition previously observed. On percussion it is found that posteriorly the lung is fairly resonant down to the lower border of the fifth rib and passing forward flatness is elicited from one to two inches lower than before the operation. In this area there are still numerous moist râles, but bronchial breathing is no longer present. Lower down, surrounding the wound in the chest, the lung is still flat on percussion and the breathing is bronchial. In this situation there has been no perceptible improvement, though this could scarcely be expected when the long duration of the affection is considered. It is astonishing that any improvement, even in the upper portion of this lobe, could have resulted under such circumstances, but that this has actually occurred there can be no doubt.

In both instances, repeated examination failed to reveal the presence of tubercle bacilli. There were, however, enormous numbers of the *Micrococcus lanceolatus*, and many of the ordinary cocci of suppuration.

AUTHOR'S NARRATION OF THE CASES.

Case 1.—P. K., male, 19 years old, single, American, insurance clerk. Had acute lobar pneumonia, right lung, March 29, 1900, followed by pleurisy. Confined to bed to May 12. After being up for three months began expectorating pus. About every twenty-five to thirty days would have intense pain lower portion of right side, expectorating quantities of purulent material with fetid odor, and be relieved. Pus would continue, in gradually diminishing quantities, twelve to fourteen days. Jolting, as horseback riding, etc., would cause pain and increase the discharge of pus. He became stooped antero-laterally, with considerable depression of right shoulder. I first saw patient during fall of 1900, and after physical examination of the chest and repeated bacteriologic examinations without finding tubercle bacilli, I advised operation, which was declined. The patient was in such poor physical condition that the family physician was unwilling to have the operation done. Patient spent the following spring and summer in the mountains of North Carolina without real improvement. In September, bacteriologic examination of expectoration for tubercle bacilli still negative. Operation consented to. Admitted to St. Joseph's Infirmary Oct. 18, 1901. Temperature ranging 98 to 100, pulse 80 to 100, expectorating large quantities of offensive pus. Continuous pain in right subscapular region over which area there was marked dulness. Mitral and aortic murmurs (hemic).

Operation.—October 22. Gas-ether anesthesia. Patient in antero-lateral decubitus. Incision along fifth rib anterior to posterior axillary line. Two inches of rib removed. Pleura greatly thickened, pus found upon aspiration. A vertical incision was made from the center of the first incision downward and an inch and a half of the sixth rib removed. Pleuro-costalis, pleuro-pulmonalis adherent and the latter continuous with thickened, indurated lung tissue and abscess wall. A circular excision of these structures a little larger than a silver dollar, opened well the abscess cavity, allowing the escape of two to four ounces of pus. This time considerable blood and pus coughed up, escaping through mouth and nose. Abscess cavity, about 3 inches in diameter, carefully wiped out with gauze, two drainage tubes with gauze (iodoform) placed in, and angle of wounds closed. Afternoon temperature 99, pulse 96, thence temperature, normal. Outer dressing changed October 23. Very little soiling. On second day drainage tubes and gauze packing easily removed. Moist, but not saturated with pus. Cavity clean and bright red. One tube replaced, cavity lightly packed with gauze. No cough, expectoration or pain after operation. Lung expanded rapidly; depression of right shoulder disappeared and cavity rapidly filling with granulations. Was gently wiped out every second or third day with iodoform gauze and drainage tube kept just within cavity until the 27th day, when only a sinus one-quarter inch by two inches remained. On the 40th day had clear respiratory murmur over the lung. Wound completely healed. Walks erect. Had gained 30 pounds and had been working as rodman in surveying corps for a week.

Case 2.—Wm. R. H., aged 59, married, laborer in saw mill. Health good until March 18, 1896, when he had acute lobar pneumonia, lower lobe of left lung, for about 10 days. Then severe symptoms subsided, but he began coughing, violent paroxysms, expectorating large "clumps" of pus. From March to August, of same year, he lost 50 pounds in weight. The expectoration of offensive pus continued from subsidence of pneumonia, always being increased after walking or talking for any length of time. After sleeping for 4 or 5 hours at night, in never lower than a semi-prone position, would, on awakening, expectorate great quantities of pus, which would almost run in a stream from his mouth. When walking around, the expectoration was so profuse that "he could be tracked by the clumps of pus." He could lie for only a few minutes on the right side, with left arm raised. Left lateral position or pressure of arm upon chest, causing pain and coughing. Pain almost constant over region of apex of heart. He had no night sweats or fever. Appetite poor. Admitted to Grady Hospital Feb. 28, 1902. Temperature 98, pulse 96. Complained of pain lower portion of chest, greatest intensity over apex of heart. Almost constant cough, expectorating large quantities of offensive pus. Could sleep only in sitting posture.

Operation.—March 3. Chloroform anesthesia. Incision 3 inches long, just beneath and slightly to axillary side of angle of scapula. Two inches of fifth and sixth ribs removed. Pleuro-costalis, pleuro-pneumonalis thickened, adherent and the latter continuous with the lining membrane of the abscess cavity. Pus found on aspiration. As abscess opened, 8 to 12 ounces of pus escaped. Several pieces of calcareous material of bony hardness were removed from the abscess cavity and torn loose from the lining membrane. A considerable area of thickened pleura was removed and the whole cavity scraped with a sharp curette. Cavity irrigated gently with normal salt solution; two large drainage tubes inserted and the whole cavity lightly packed with iodoform gauze. Coughing immediately relieved. On the fourth day tubes and packing removed and cavity irrigated with normal salt solution, tubes and packing replaced. After irrigation, patient could taste the salt solution and later the iodoform. Tubes and gauze removed and left out on the seventh day. Cavity irrigated daily. Considerable purulent discharge. Two days after drainage tubes were removed, again began having paroxysms of coughing, expectorating pus. Tubes replaced, cough stopped at once. After a slight exacerbation, soon after operation, temperature continued normal and pulse gradually improved. Appetite good, and when patient left the hospital April 23 he had gained 45 pounds. A small sinus from which a slight quantity of serous fluid escapes, still persists.

Later: Latter part of July sinus closed; cure complete.

SYNOPSIS OF TABLES FOLLOWING.

Cases.	Average Age.	Male.	Female.	Average Time. Pneumonia to Operation.	Adhesions Per cent	No Adhesions Per cent	Recovered. Per cent.	Improv Per cent	Died. Per cent	Total cases.
Acute	29 4 years (4 to 60)	27	13	31 3 days.	34 85	6 15	33 82 5	2 5.	5 12 5	40
Simple chronic	34.1 years (19 to 60)	8	4	1 year	9 75	3 25.	6 50	2 16 7	4 33 3	12
Chronic putrid	27.2 years (19 to 60)	15	8	2 1,6 years.	18 78 2	5 21 8	12 52 1	4 17.4	7 30 5	23
Total. . . .	30.2 years	50	25	13 months.	61 81 3	14 18 7	51 68.	8 10 7	16 21 3	75

THE SURGERY OF PULMONARY ABSCESS AND GANGRENE FOLLOWING PNEUMONIA. TABLE 1.—SIMPLE ACUTE ABSCESS.

Author.	Sex and Age.	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.
Körte.	Male, 37.	Pneumonia, left lower lobe, 3 weeks previously.	Dulness from angle of scapula down, with weak bronchial breathing and many râles.	Yes.	Pneumotomy; found cavity in left lower lobe, admitting two fingers. Second operation one month later to relieve accompanying empyema.	Recovery after 8 weeks.
Körte.	Male, 36.	Influenza, pneumonia 2 weeks previously.	Dulness posteriorly from angle of scapula downward, left side.	Yes.	First operation opened an empyema. Second operation performed 4 weeks later on account of pain to left of precordium. Abscess in left upper lobe opened.	Recovery in 8 weeks.
Körte.		Pneumonia 4 days previously.	Extensive dulness anteriorly to third rib, posteriorly to spine of scapula.	Yes.	Thoracotomy; circumscribed empyema opened. Dulness continued. Fever and sputum like that of an abscess. Second operation; opened encapsulated abscess of lung.	Recovery in 3 months.
Edward Martin, Philadelphia, unpublished.	9 years.	Pneumonia.	Faint dulness left of cardiac dulness and merging into it.	Yes.	Pneumotomy; half ounce of pus evacuated.	Recovery.
R. Matas, unpublished.	Male, 22.	Pneumonia.	Well-defined area of dulness over base of right lung, bronchial breathing; hectic fever.	Yes.	Resected 8th rib and evacuated nearly a pint of pus; no odor; cavity had rigid, rough wall; iodoform gauze packing.	Recovery.
W. J. and C. H. Mayo, Rochester, Minn., St. Mary's Hospital Report, 1901.	Female, 10.	Grippe, pneumonia 4 weeks previously.	Physical signs; located abscess in left lung; *x*-ray not of material aid.	Yes.	First operation failed to find abscess. Second operation two weeks later; opened abscess in front of previous opening.	Recovery.
H. Jablokow, Archiv. f. Kinderheilkunde. vol. 31, p. 278.	Male, 10.	Grippe, pneumonia 5 weeks previously of right lower lobe.	Dulness from third rib in front, from angle of scapula behind and spreading axillary regions. Decreased respiratory murmur and fremitus and moist râles. A tumor appeared 4 by 6 c.m. over the 4th to 6th ribs. On coughing frothy muco-pus came from wound.	Yes.	Evacuated four ounces of bloody pus from tumor. From incision could palpate cavity in lung (size of an egg).	Fever, etc., fell rapidly; fistula still present.
Green, Lancet, Jan. 24, 1901, p. 196.	Female, 6.	Pneumonia of entire left lung 4 weeks before.	Bulging and tenderness over 5th rib (ax. line). Large quantity pur. expectoration, dulness, tubular breathing & dec. fremitus.	Yes.	Opened abscess in lung with trocar as guide. Drained.	Recovered in a few weeks.
Mass. General Hospital.	Female, 36 mos.	Pneumonia 3 weeks.	One week after fluid was found in chest. About half cup of creamy fluid drawn off. Since then considerable pain in right side. Cough with white, frothy expectoration. Shortness of breath. A distinct bulging in axillary region of the side.	None.	Ether given. A portion of 5th rib removed. Opening made in right lung. Considerable hemorrhage and one and one-half pints pus evacuated. Patient also coughed up considerable pus and blood.	Recovery in 3 weeks.
Runeberg, Deut. Archiv. f. Klin. Med., vol. 41, 1887.	Male, 33.	Pneumonia 4 weeks before; no crisis; physical signs cleared up, but fever again began (remittent type).	Dulness from mid-axillary line to spine or scapula.	Yes.	Exploratory puncture in 6th intercostal space showed pus. Resected 6th rib. Entered cavity in lung with soft wall and evacuated pus. Drained. Temperature fell at once.	Recovered in 4 months.
Huber, Trans. Am. Ped. Assn., vol. 3, 1892.	Male, 4.	Pleuro-pneumonia one month before.	High temperature and respiration rapid. Bronchial breathing.	Yes.	Exploratory puncture showed pus. Drained.	Recovered 8 months later.
Quincke, Berlin Klin. Woch., 1888, No. 18.	Male, 23.	Left lower lobe, pneumonia 3 months before.	Dulness behind as high as fifth dorsal spine. Vocal fremitus absent and respiratory murmur decreased. Very fetid expectoration; marked fever.	None.	After application of zinc chlorid resected rib. No cavity found.	Recovered 2 months later.
Rochester Med. News, Jan. 20, 1894.	Male, 38.	Pneumonia of right middle and lower lobes 3 weeks before first operation.	Elastic fibers found in sputum. Tympany in inter- and infrascapular regions with amphoric breathing, and voice. Dulness below it.	Yes.	Resected 5th rib and drained. No relief, followed by pyemic symptoms. Three months later more extensive resection; cavity packed.	Recovered in 3 months after 2d operation.
Sewerin, Botkin's Hosp. Zeitung, 1896, No. 14.	Female, 22	Soon after an attack of croupous pneumonia, sign of a cavity.	Signs of cavity in axillary region.	Probably.	Incised and evacuated 350 c.c. pus with necrotic lung masses.	Recovered.

cet, Dec. 18, 189	emale, 21	Pleuro-pneumonia nine weeks before; daily expectoration of pint of pus and high fever.	Dulness over right lower lobe laterly and behind; coarse gurgling râles under right scapular and bronchial breathing.	Adhesions with encapulated serous exudate.	Chloroformed. Exploratory puncture showed pus. Resected rib and found irregular cavity of large size.	Recovery in 2 months	
Elsner, Medical News, March 25, 1899.	Male, 34.	Severe pneumonia 11 days before.	On 11th day symptoms of pus accumulation in middle lobe of right lung. Localization very difficult.	Yes.	Lung incised and drained. Incision followed by considerable hemorrhage. Found pneumococci and staphylococci.	Recovered.	
Elsner, Medical News, March 25, 1899.	Male, 26.	Pneumonia middle and lower lobes of right lung with delirium tremens just preceding operation.	Crisis followed by intense pain below scapula and in axilla and fever. Dulness and amphoric breathing.	Few adhesions.	Exploratory puncture showed pus. Resected rib and opened an abscess in lung just beneath pleura, containing half a pint of pus. Local anesthesia.	Recovery 2½ months after operation.	
Crerar, British Medical Jour., May 20, 1899.	Male, 9.	Right-sided pneumonia just before (4 weeks).	Four weeks after crisis had harassing cough, but no sputum. Marked emaciation, temperature, dull area toward axilla and from fifth dorsal spine down. Vocal resonance lost. Diagnosis of empyema made.	Yes, at upper part.	Could not find abscess at first, until several ribs resected. Opened cavity size of small orange in lung with soft, ragged walls Gauze packing.	Healed in 2 months after operation.	

TABLE II.—ACUTE GANGRENOUS ABSCESS.

Author.	Sex and Age.	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.	Result of Autopsy.
Körte.	41.	Pneumonia 1 month previously.	Marked dulness over lower and lateral aspects of left lung. Putrid sputum and odor.	Yes.	Circumscribed empyema opened, communicating with abscess in lung. Iodoform gauze drained.	Recovered in 7 weeks.	
Körte.	Male, 56.	Pneumonia 4 weeks before.	Dulness over right lower lobe laterally. Decreased respiratory murmur and fremitus. Puncture in 6th interspace showed thick putrid pus.	Yes.	Pneumotomy; large irregular cavity in right lower lobe opened.	Recovered in 6 weeks.	
Edward Martin (Philadelphia).	Male, 14.	Pneumonia.	Profuse and offensive expectoration, following subsidence of physical signs. Dulness over area size of hand at base of right lung, with large bubbling râles.	Yes.	Circumscribed empyema found under 9th rib, which was resected. Opening into pulmonary cavity found, and enlarged, and drained.	Complete but slow recovery.	
Edward Martin (Philadelphia). Unpublished case.	Child, age and sex not given.	Pneumonia followed by symptoms of profound septic poisoning and fetid expectoration.	All pointed to abscess cavity in right lower lobe.	Yes.	Two ribs resected and whole right lower lobe found in a condition of acute gangrene.	Death in 24 hours.	
Jas. H. Dunn (Minneapolis). Unpublished case.	Female, 35.	Pneumonia, left lower lobe 2 weeks before.	Chilled, expectoration of fetid pus. Sign of cavity.	Yes.	Resection of 6th and 7th ribs in posterior axillary line. Exploring needle showed pus. Cavity opened and drained.	Recovered in 9 weeks.	
Chas. A. Morton, British Medical Journal, Feb. 17, 1900.	....	Acute pneumonia 4 days previously.	Dulness from angle of scapula down. Tubular breathing.	None. Held up lung with forceps.	Sutured pleura and evacuated pus. No infection of pleura resulted.	Recovered in 4 months.	
W. J. and C. H. Mayo, St. Mary's Hospital Report, 1901.	Female, 42.	Pneumonia 3 months before.	Physical signs and *x*-ray not of marked aid in localizing cavity.	None.	Suture of visceral to parietal pleura. Second operation 5 days later, abscess drained; gangrene of lung.	Recovered.	
Quincke, Mittheilungen aus den Grenzgebieten, 1896; also Berl. Klin. Woch., 1888, No. 18.	Male, 32.	Atypical pleuro-pneumonia 10 weeks before.	Those of abscess in right lower lobe. Fever and putrid sputum.	None.	Zn Cl_2 paste used to produce adhesion. 12 days later pneumotomy.	Recovered in 4 months.	
Quincke, Mittheilungen aus den Grenzgebieten, 1896.	Male, 33.	Pneumonia 2½ years before. Fresh pneumonia probably cause of abscess.	Putrid sputum, containing elastic fibers. Behind on right side from 6th dorsal spine down dulness, bronchial breathing and metallic râles.	Yes, shown by lack of respiratory mobility and inspiratory retraction.	Exploratory puncture in 7th space showed pus. 8th, 9th and 10th ribs resected in scapular line. 3 days later gangrenous cavity opened and drained.	Recovered in 6 weeks.	
L. C. Smith, Lancet, July 20, 1889.	Female, 30.	Atypical pneumonia 9 weeks before.	Cavity symptoms at angle of right scapula. Putrid sputum.	Yes.	Exploratory puncture below angle of scapula negative. Pneumotomy with blunt dilatation of small cavities.	Improved, putrid odor disappeared.	
H. Jablokow, Archiv. f. Kinderheilkunde, Vol. 31, p. 278.	Male, 10.	Probable pneumonia 3 weeks before.	Extensive dulness over right lower lobe, with fine moist râles, and bronchial breathing. High fever, rapid breathing and marked fetid breath.	Yes.	Resected 7th rib in axillary line; entered cavity filled with putrid fluid and fine lung detritus. Removed a 5 cm. piece of gangraneous (sequestrum) lung. Greatly improved, yet fever and expectoration continued. Opened 3 cavities one month later by resecting rest of 7th rib.	Died 5 months later, of inanition, though general condition greatly improved.	Extensive adhesions of right lung. Around wound of operation many pus cavities filled with gangrenous particles, and communicating with several bronchi.

TABLE II, CONTINUED.—ACUTE GANGRENOUS ABSCESS.

Author.	Sex and Age.	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.	Result of Autopsy.
H. B. Meakin, British Medical Journal, 1896, Vol. ii, p. 747.	Male, 31, insane.	Pneumonia, base of right lung, May 20, 1896.	Three days after beginning of disease, area of dulness increased and noticed fetid breath. Dulness to clavicle and to left of sternum. No expectoration. High fever.	None.	Schleich anesthesia. Exploratory puncture, obtained one ounce of fetid, thick fluid. 6th and 7th ribs resected. On opening pleura, large quantity of fetid fluid escaped. No collapse of lung. Opened gangrenous cavity of lung, and drained.	Recovered.	
Openchowski, Zeit. f. Klin. Med., Band 16, 1896.	Male, 30.	Pneumonia 3 weeks before, followed by a sudden expectoration of large amount of fetid pus. (150-350 cm.) daily.	Decreased resonance over right upper lobe in front, from 3d rib down. Dulness further down with bronchial breathing and middle-sized moist râles. Later tympany, amphoric respiration and metallic râles in axilla.	Yes.	Resected 5th and 6th right ribs. Opened lung with cautery and entered cavity communicating with bronchus.	Recovered in 8 months.	
S. C. Smith, Lancet, 1880. Jan. 17, p. 86.	Male, 60.	Pneumonia, right lung, 14 days before.	Sudden fetid expectoration on 13th day after beginning of pneumonia. Tubular respiration around spine of scapula and below nipple. Diagnosed cavity of middle lobe.	Yes.	Opened cavity by incising between ribs and inserting tube. But little relief from toxic condition.	Died 4 days later.	
Hofmokl, Wiener Med. Presse, Vol. 32, Nov. 27, 1892.	Male, 32.	Pneumonia some years before, fresh attack previous (14 days) to operation, followed by gangrenous sputum.	On right side, behind, dulness, and large moist râles.	Yes.	Resected 7th rib at angle of scapula. Pleura looked gray and lung felt firm. Made 3 negative exploratory punctures. The 4th puncture 2½ inches into lung and showed small amount of putrid pus.	Recovered in 3 months.	
Edv. Bull, Nordiskt Med. Arkiv, Vol. 13, No. 17.	Female, 23.	Two months before had an acute bronchitis, later became putrid, followed by pneumonia of left upper lobe.	Signs of cavity. Exploratory puncture showed putrid pus causing infection of soft parts along line of puncture.	Yes.	Incision in 4th intercostal space. Drained.	Recovered in a short time.	
Moir, Lancet, Jan. 9, 1897.	Male, 23.	Left-sided acute pneumonia 4 weeks before. Symptoms of gangrene.	Septic symptoms. Physical signs best marked in axillary region and below spine of scapula.	Yes.	Incision over axillary region; evacuated portions of gangrenous lung from large cavity in latter. Inserted tube.	Recovered 5 weeks after operation wound was healed.	
Jayle & Jaffray, Soc. Anatomique, 1893.	Male, 41.	Pneumonia of righ lung 4 weeks before.	Dulness and absence of respiratory sound over base of right lung. Sudden expectoration of large amount fetid pus. High fever.	Yes.	Local anesthesia. Incision in 8th intercostal space, and evacuation of large amount of fetid pus.	Died one week after operation.	Found cavity occupying greater part of right lower lobe, into which several bronchi opened.
Hans Kohn, Deut. Med. Woch., 1898, 313, Vereins Beilage.	Male, 48.	Right upper lobe influenza. Pneumonia just before onset of gangrene symptoms.	Indistinct sign of a cavity in right lower lobe. X-Ray showed shadow size of palm of hand over lower lobe.	Yes.	Resected 8th, 9th and 10th ribs, but a tear in adhesions gave rise to pneumothorax; discontinued operation. After resorption of pneumothorax (2 weeks) made exploratory puncture, followed by severe hemorrhage from mouth.	Died immediately after puncture. Suffocation caused death, in spite of tracheotomy.	Found a cavity occupying lower lobe. Hemorrhage had not come from this cavity.
Phillips & Nash, Lancet, Nov. 21, 1896.	Male, 36	Pneumonia 4 weeks before, followed by septic symptoms and fetid breath.	Dulness over 5th rib in right axillary line, decreased respiratory sound, vocal resonance and fremitus.	Yes.	Exploring needle drew fetid pus from the 6th intercostal space. Resected 1¼ inches of 6th rib and opened gangrenous cavity in right lower lobe.	Healed one year after operation.	
Tuffier, Bull. de la Soc. de Chir., 1895, p. 765.	Male, 60.	Pneumonia 6 weeks before, followed by persistent hemoptysis, and odorless sputum.	Decreased resonance behind about angle of scapula, loss of fremitus, bronchial breathing and subcrepitant râles.	Yes.	Resected 7th rib and opened cavity size of head of fetus in lower lobe, from which brownish malodorous pus escaped. Gauze packing. Severe hemoptysis 6 days after operation.	Recovered.	
Ramsay, Annals of Surgery, 1890.	Male, 32	Pneumonia a few weeks before. Soon after crisis gangrene began.	Lower one-third right lung dull. Respiratory murmur absent. Exploratory puncture showed greenish pus.	Yes.	Resected 3d rib in axillary line. Opened cavity 2 cm. long, containing cupful of gangrenous-looking fluid. Drained.	Recovered in 6 weeks.	

TABLE III.—SIMPLE CHRONIC ABSCESS.

Author.	Age and Sex	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.	Result of Autopsy.
Körte, Archiv. fur Klin. Chir. Vol. 63.	Male, 52.	Pneumonia 2 years before.	Dulness and *small moist râles* over middle lobe. X-ray showed distinct cavity, middle of right lung.	None.	Catgut suture of pleura. Marked dyspnea during operation. Only once small quantity of pus obtained.	Died 3 hours after operation.	Showed a system of bronchiectatic small cavities, surrounded by pneumonic areas. Only the smallest cavity had been opened.
Körte, same.	Male, 21.	Pneumonia 6 months before.	Dulness, tympany, and amphoric breathing, with large moist râles over right upper lobe.	Yes.	Pneumotomy. Pus evacuated from bronchiectatic abscess found in right upper lobe.	Recovered in 18 weeks.	
Körte, same.	Female.	Influenza-pneumonia 2 years before.	Over left lower lobe marked dulness, bronchial breathing. Resonance decreased and dry râles over rest of lung. Later amphoric breathing over left lower lobe before operation.	Yes.	Bronchiectatic pus cavity opened. Later a communication with a second cavity established.	Died three months later.	Stenosis of main bronchus. Extensive cavity in left lung.
Körte, same.	Female, 41.	Influenza-pneumonia of right lower lobe one year before.	Posteriorly on right side, dulness increased from above down over upper portion; bronchial breathing from angle of scapula down; light amphoric breathing.	Yes.	Small, circumscribed empyema opened. Also opened abscess in right lower lobe.	Died 7 days after operation, of fresh pneumonia of R. U. L.	Showed that operation had opened walnut-sized cavity in right lower lobe, but there were smaller ones present not opened.
Carl Beck, New York, N. Y. Med. J., Aug. 28, 1897.	Male, 31.	Pleuro-pneumonia one year previously.	On right side in front; tympany and râles and bronchial breathing.	None.	Resected 8-10th rib. One ounce pus evacuated. Some odor.	Healed 2 months after operation.	
Karewski. Arch. f. Klin. Chir., Vol. 67, p. 555.	Female, 35.	Left pleuro-pneumonia 4 months previously.	Dulness from *angle of scapula* down. High temperature.	Yes.	Opened abscess, size apple, in lower left lobe. No communication with bronchus found.	Recovered.	
Quincke, Berl. Klin. W., 1888, No. 18.	Male, 26.	Pneumonia 2 years before in left lower lobe.	None given.	None.	Zn Cl_2 paste applied and 9th rib resected. Three weeks later pus discharged through wound.	Alive 12 years later (1896), with fistula.	
Quincke, Mittheilungen aus den Grenzgebeiten, 1896.	Male, 25.	Double pneumonia 2 months before, complicating older bronchiectases.	Periodical expectoration of large quantities of pus. Dulness over 8th space (left). Bronchial breathing, metallic râles. Dulness from 5th left rib down in front. Later amphoric breathing and large moist râles.	Only partially before paste used.	Zn Cl_2 paste to cause adhesion; 9th, 10 and 11th ribs resected. Opened into cavity communicating direct with bronchitus. After operation, sputum greatly decreased.	Recovered in 2 months.	
Quincke, same place.	Male, 34.	Pneumonia 17 years before, and again 2 years before.	Respiratory mobility decreased on left side. From 7th dorsal spine down dulness; bronchial breathing, metallic râles. Paroxysmal expectoration of large quantities of non-fetid sputum.	Doubtful before paste used.	After paste (Zn Cl_2) used, pneumotomy, five weeks later. Pus evacuated and cavity drained.	Much improved; still has fistula.	
Osler and Halstead, Johns Hopkins Hosp. Bulletin, Dec., 1890.	Male, 60.	Pneumonia several times. Exact date not known. At intervals hemoptysis and putrid expectoration for years.	Loud resonant râles, amphoric breathing, and metallic râles in left axilla. Loud bubbling râles at base of left lung. Respiration, 40; temperature, 100. 3-600 c.c. Fetid expectoration daily.	Yes.	Resected 4th and 5th ribs and opened freely a series of cavities.	Died 3 days after operation. Too weak to react.	Showed that they had opened into a system of large bronchiectatic cavities in left upper lobe.
Kijewski, Centralb. f. Mitth. aus den Grenzgebieten der Inn. Med. und Chir., No. 4, 1901. Also Gazette Lekarske, No. 4, 1897.	Male, 32.	Right-sided pleuro-pneumonia, followed by a severe dyspnea and cyanosis some time before.	Pyemic type of fever. Dulness over right lower lobe.	Yes.	Resection of 10th rib after successful exploration had shown pus. Lung curetted and packed with gauze. Fever continued for some time.	Recovered.	
McRae, Atlanta, Ga.	Male, 19.	Lobar pneumonia, 3 weeks later purulent expectoration began. 1 year, 7 months previous to operation.	Third rib at spine to base of lung, right axillary side dulness, bronchial breathing, small and large moist râles. Outside lower angle scapula, area 2 inches in diameter, metallic resonance, voice sound metallic in character.	Yes.	Fifth and sixth ribs resected; aspirated pus; cavity 3 inches in diameter in lung opened; tubular and gauze drainage; fever and cough disappeared immediately.	Recovered rapidly.	

TABLE IV.—CHRONIC PUTRID ABSCESS.

Author.	Sex and Age.	Etiology and Duration.	Physical Signs Before Operation.	Adhesions Present.	Operation and Condition Found.	Result.	Result of Autopsy.
Körte.	Male, 33.	Pneumonia 10 months previously.	Tympany, gurgling râles, amphoric breathing below right clavicle and in axilla.	Yes.	Curved incision. Pectoral muscles divided. Exploratory puncture negative. With thermo-cautery *opened* large cavity filled with fetid fluid, and gangrenous lung.	Recovered in 18 weeks.	
Körte.	Male, 29.	Pneumonia 2 years previously.	Tympany in front. Dulness behind, over left upper lobe; no respiratory murmur over entire lung. Many râles over dull area. Typical 3-layer fetid sputum.	None.	Pleura sutured. Marked cyanosis. No further operative measures.	Died four days after operation.	Entire left apex composed of a system of communicating bronchiectatic cavities.
Körte.	Male, 23.	Duration, 7 years.	From angle of scapula down, bronchial breathing and dulness.	Yes.	Exploratory puncture revealed putrid pus. Pneumotomy. Putrid abscess emptied; left lower lobe near it was encapsulated empyema.	Recovered in 4 months.	
Körte.	....	Pneumonia, 5 months previously.	Absolute dulness; no respiratory sounds from 3d rid down, on right side. Diagnosis before operation was putrid pyema, and gangrene of lung.	Yes.	Thoracotomy. Pus evacuated. *No communication* found with abscess cavities. Patient remained septic.	Died in 10 days.	Showed two large abscesses in right lower lobe, not opened and diffuse bronchiectasis.
F. Krause.	Male, 36.	Pneumonia 9 months previously of left lower lobe.	Dulness, amphoric breathing, moist metallic râles near angle of scapula. Lower down, dulness, diminished respiratory sound and fremitus. Bad odor to expectoration and elastic fibers.	None.	Pleural cavity tamponed, opened 5 days later, when adhesions were found. Cavity in middle of lower lobe opened, size of an apple, containing putrid fluid, and large sequestrum of lung tissue.	Recovered in 3 months.	
Hadra, Centralblatt f. Chirurgie, 1897, p. 103, supplement.	Female, 38	Severe pleuro-pneumonia 8 years previous, since then invalidism.	Large quantity of putrid sputum. X-ray showed shadow entire left lung, heart displaced. Over right lower lobe dulness, and when full expectoration, tympany. Exploratory puncture negative.	Yes.	Pneumotomy, abscess cavity opened.	Recovered.	
Krause.	Female, 19	Pneumonia of left lower lobe and left-sided pleurisy with effusion, 6 months previously.	Dulness over left lower lobe.	Yes, at first operation; at second, lung *retracted.*	At first operation found empyema with greatly thickened pleura. Fever and expectoration increased after operation. Sputum putrid and contained elastic fibers. No physical sign of a cavity. A second operation, decorticalized the lung and looked for abscess cavity in vain over both uper and lower lobes. Two abscesses opened spontaneously into dressings.	Healed 5. months later.	
Jas. H. Dunn (Minneapolis). Unpublished case.	Female, 22	Pneumonia 4 years previously.	Expectorated cupful fetid pus daily, usually at one time. Signs of cavity on right side posteriorly.	None.	Two operations; one between scapula and spine; other in axilla. Some pus discharged from posterior opening, but no improvement, probably large cavity not opened.	Died 1 year after operation.	
Wiemer, Centralblatt f. Chirurgie, 1898, p. 183.	Male, 33.	Pleuro-pneumonia 2 years before.	Dulness over left lower lobe. Tympany in axillary and angular line. No respiratory mobility. Putrid sputum in large quantities.	Yes.	Resected 8th-10th ribs; opened cavity with cautery, size adult fist. Contained large sequestrum. On 4th day after operation found a second cavity.	Healed in 6 weeks.	
Williams and Marshall, Lancet, Dec. 30, 1882, p. 1107.	....	Chronic pneumonia of both lungs, and fetid expectoration, for 1 year.	In right lung symptoms of a cavity.	Probably.	Inserted trocar and drained cavity.	Died 6 weeks after operation.	Multiple bronchiectases in right lung. Largest had been drained. Death due to gangrenous cerebral abscess.
Priestley, Leech, Lancet, Jan. 13, 1894.	....	Pneumonia 6 months before, followed in 2 months by fetid expectoration.	Dulness from 2d rib down on left side with absent vocal fremitus and resonance. Respiratory murmur decreased. No elastic fibers. No signs of cavity.	Yes.	Exploration in 2d interspace showed pus. With needle as guide, introduced drain. Pneumonia 2 weeks after operation. No ribs resected.	Recovered 8 months after operation.	
Quincke, Berl. Klin. Woch., No. 19, 1887.	Male, 26.	Pneumonia 2 years before; since then fetid expectoration.	Dulness from 4th dorsal spine down, and as far anterior as axilla. Loud amphoric respiration, and voice. No change with changed positions.	None.	Resected 9th rib; found no cavity, but 3 weeks pus discharged from wound spontaneously. Second resection 6 months later to close cavity.	Discharged with fistula. Able to work.	

Quincke, Berl. Klin. Woch., No. 18, 1888.	Male, 32.	Atypical pneumonia 3 months before.	Dulness on right side, with no sharp boundaries, to spine of scapula and mammary line. Loud bronchial breathing and metallic râles. Very purulent fetid sputum.	None.	Zn Cl_2 paste in 8th intercostal space, followed by adhesion. Resected 8th and 9th ribs, and again applied zinc paste. After days later abscess opened.	Recovered in 4 months.	
Burgess and White, Lancet, April 16, 1898.	Female, 25	Pneumonia (?) 3 years before.	Hectic fever, large amount putrid sputum expectorated. Lower left lobe dull. Decreased vocal fremitus and resonance.	Yes.	Found circumscribed pleural effusion beneath it; abscess drained.	Recovered in 2 months.	
Sutton (quoted by Mosler), "Lungen-Chirurgie," 1883, Wiesbaden.	....	Acute attack pneumonia 5 years before; 2 years later a severe hemoptysis.	Signs of cavity in left lower lobe, with fetid expectoration.	Yes.	Incision in 6th intercostal space. Drained. Daily irrigation with carbolic solution.	Died suddenly on 31st day.	No cause found for death. Cavity occupied entire lobe.
Oehler, Munchener Med. Woch., 13, Oct., 1891.	....	Three years before had gangrene following pneumonia of left lower lobe. No cavity signs. Shortly before operation had after influenza a fresh pneumonia.	Chills, dyspnea, dulness, bronchial breathing, and metallic râles.	Not at first, but at second operation (4 weeks later).	Exploration negative. Seventh rib resected, followed by pneumothorax. Latter soon disappeared. Second operation (4 weeks later) found pleura adherent; could not find cavity but inserted tube. On second day pus discharged.	Still had fistula.	
Kummell, Centralblatt fur die Grenzgebieten der Innern Medicin und Chirurgie, 1901, No. 3.	Female.	Left lower lobe pleuro-pneumonia, 2 years before.	Not given.	Yes.	Resected 6th and 7th ribs. Puncture. Thermo-cautery. Very severe hemorrhage. Cavity size of egg, communicating with large bronchus.	Small fistula after 6 months.	
Quincke, Mitth. a. d. Grenzgeb. d. Inn. Med. u. Chir., 1896.	Male, 34 (Case 6).	Influenza, pneumonia 1½ years before.	Over left apex in front signs of cavity. Dulness behind, marked from 5th dorsal spine down; bronchial breathing, large moist râles.	Yes.	Resected 3d rib in axillary line. Incision into cavity evacuated fetid pus and mucus.	Died 1½ hours after operation.	Death due to weakness soon after operation. Small bronchiectatic cavity in upper lobe; system of cavities in lower lobe; one opened.
Northrup and McCosh, N. Y. Med. Journal, vol. 1, 1897.	Female, 23	Influenza, pneumonia, 6 months before.	Flatness from 3d rib down over right lung in front. Absence of respiratory sound and râles.	Yes.	Resected 6th rib and opened abscess in lower lobe, containing 3 ounces of thick and very fetid pus. Severe shock followed.	Recovered in 3 months after operation.	
Blunt, Lancet, 1888, Vol. 1, p. 622.	Male, 20.	Pleuro-pneumonia of right side; 2 weeks later fetid expectoration, which continued to time of operation, 3½ months later.	Hectic fever, sweats. Exploratory punctures showed fetid pus.	Yes.	Resected rib 1 inch below angle of scapula; used needle as guide, and opened gangrenous cavity. Drained.	Recovered in 6 weeks.	
Tuffier, Bull. de la Soc. de Chir., 1895, p. 765.	Male, 41.	Pneumonia with fetid expectoration 4 months before.	Dulness in front over right lung, amphoric breathing and moist râles. Severe hemorrhage 5th day after operation.	Yes.	Incision in 3d interspace, opened cavity size of turkey egg. Opened another cavity above it; both contained black blood mixed with lung débris.	Recovered in 3 months.	
Eisendrath.	Male, 60.	Right lower and middle lobe pneumonia 2 years before; since then fever, expectoration of large quantity of pus (3 pints daily), frequently fetid; emaciation; dyspnea, etc.	Respiration, 60; pulse, 126. No change in percussion anteriorly over right lung. Behind from scapula down area of dulness, size of palm of hand; also some bulging of intercostal spaces here. Over this area a few moist râles to be heard. Diagnosis made of gangrene of lower lobe.	Yes.	Resected 8th and 9th ribs under angle of scapula, entered free pleura cavity, upper lobe collapsed, marked dyspnea and cyanosis. Lower lobe found adherent in front. Resected 9th and 10th ribs in anterior axillary line, pleura adherent; opened a circumscribed empyema, and beneath it opened gangrenous cavity in lower lobe, and a small cavity in middle lobe containing pus. Drain and gauze inserted.	Died 12 hours after operation.	Found cavity size of fist in right lower lobe (gangrenous). Adhesions bound lower lobe to chest wall. Had also opened one of a series of bronchiectatic cavities in middle lobe. Some hemorrhage into pleura cavity.
McRae, Atlanta, Ga.	Male, 59.	Left lobar pneumonia, followed 10 days by large quantities fetid pus; constant chest pain; slept sitting until operation, 6 years after pneumonia.	Third rib, at spine, to lower border of heart, dulness, bronchial breathing and moist râles. Angle of scapula to near spine, area 4 inches in diameter, metallic tympanitic sound on deep percussion; tapped lightly, none.	Yes.	Fifth and sixth ribs resected under angle of scapula; aspirated pus; thickened pleura removed; pus cavity, size of fist, in lung opened; 8-12 oz. pus, and calcareous deposits; tubular and gauze drainage.	Two months later, cavity 1½ inches in diameter, fistula; respiratory murmur clear to cavity. Two mos. later sinus closed; cure complete.	

THE INOPERABLE NATURE OF THE PULMONARY TUBERCULAR LESION.*

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In no department of surgery have the advances of the past few years been more signal than in that which pertains to the surgery of the chest. Conditions which, as recently as ten years ago, were considered to be irremediable by any method of treatment or were, perhaps, classed among the hopeless medical cases, have now been transferred to the domains of surgery and surprisingly good results have been obtained. The pericardium and the heart have been invaded; the mediastinum has been employed as an avenue of approach; lesions of the pleura that have previously been considered as hopeless have been brought within the pale and the surgery of the lung has become established on a firm scientific basis.

Perhaps the most fascinating part of chest surgery is that which concerns the lung, since it is here that best results have been obtained. Acute simple abscess of the lung and acute abscess following acute gangrene of the lung may now be treated medically for from four to six weeks. Then should the healing process fail to progress favorably, it is the opinion of the best observers that this case becomes surgical and that the cavity should be drained from outside. Such operative treatment has resulted in the recovery of 90 per cent. of simple abscesses and 61 per cent. of acute gangrene abscesses, while a small percentage in each are improved. The operative treatment of abscess following the lodgment of a foreign body has been somewhat less successful but is an imperative operation. The operation for chronic abscess of the lung has not thus far yielded good results, yet the results following chronic lung gangrene abscesses are very encouraging. The treatment of empyema has been very greatly facilitated by knowing that a majority of cases of empyema are the result of the rupture of a lung abscess into the pleural cavity. The treatment of bronchiectatic cavities by surgical operation has been so extremely unsatisfactory by reason of its high mortality (80 per cent.) and a failure to obtain results, that it can not be considered to be a justifiable procedure except in those few cases in which the cavity is single and of the saccular variety. The extirpation of echinococcus cyst of the lung has yielded 91 per cent. of recoveries. As a further element in the development of surgery of the lung, it must be stated that a technic and an experience has been developed which convinces us beyond question that the pleural cavity can be opened for operative procedure on the lung, even for abscess, without the slightest reference to the presence or absence of pleural adhesion; that the lung tissue can be incised, excised and sutured; that an individual can live with but one lung; and lastly, that the cavity left after the collapse or excision of lung tissue may be filled by the excision of the ribs and caving in the chest wall.

It is but natural that the very first success in lung surgery should suggest the question, can this be applied to that most dreaded of all lung conditions—pulmonary tuberculosis? Nor is it surprising that each new success of lung surgery should call forth every and repeated effort on the part of the surgeon to bring some part of or the entire disease within the surgical field. Such attempts have been made, many cases are reported and some writers already insist upon the excision of diseased tissue and the drainage of cavities in all cases of pulmonary tuberculosis where this is possible.

HISTORICAL SUMMARY.

It is but a natural inference that tuberculosis of the lung remained a *noli me tangere* up to the introduction of aseptic surgery. Mosler first took advantage of this surgical advance and caused the exposure, incision and cleansing of a tubercular cavity by the surgeon Heuter, in 1873. This operation was not followed by a favorable result. The animal experimentation of Schmidt, Bloch and more particularly, Gluck, demonstrated beyond question, however, that portions or entire lobes of the lung could be safely resected. Then the circle of proof seemed to be completed when Biondi resected and completely cured an artificially induced tubercular focus in the lung. Pneumectomy at once replaced pneumotomy and the radical removal of the tubercular focus seemed to be as rational as that of malignant tumor. This belief was only strengthened by the demonstration of the tubercle bacillus in 1882 by Koch.

Ruggi attempted the excision of a tubercular focus in the lung of a man and the patient promptly died. This result served as a lasting set-back to surgical enthusiasm in this direction, and not until the discovery of Koch's tuberculin was interest regained. It was now supposed that the tuberculin would destroy all tubercle bacilli, and that there would be left to the tissues the burden of casting off the tuberculous tissue, of overcoming the mixed infection and healing destruction cavities. Tuberculosis seemed to be cast at a bound into the realm of surgery. The exposure and incision of cavities (pneumotomy) now seemed to be the operation indicated. Tuffier has collected the statistics of 27 cases treated by this method up to 1897. None of these patients were cured of tuberculosis, many died as a result of the operation, and only one survived for more than a few months. This one case (of Sonnenberg) lived five years, and the cavity filled up with scar tissue, yet tubercle bacilli never disappeared from his sputum and at the time of his sudden death a disseminated miliary tuberculosis and a cavity the size of a hazel nut were found in his lung. It is, of course, needless to state that this intoxication was soon over and that nothing is now heard of the method.

SUMMARY OF REPORTS FROM MANY AUTHORS.

Tuffier has found the apex of the lung the seat of a tuberculosis in which the pleuritic adhesions were coextensive with the tubercular process and in which the entire tubercular area was excised as though it were a tumor. This case is reported recovered.

Lawson of Hull has excised an apex with persistence of a sinus.

Doyen has performed a similar operation.

Porrit recommends the excision of all tubercular tissue possible and states that the excision must be thorough, inasmuch as an error of one-half inch may jeopardize the results of the operation.

Lane states that there must be a time in every case of undoubted tuberculosis of the lung when surgical cure is possible, and enters a plea for early operation in such cases. *He would advise the excision of tuberculous tissue.*

Ferguson has reported a case in which a fluctuating swelling under the clavicle was incised and found to be a tubercular abscess secondary to pulmonary tuberculosis. The lung was subsequently opened, no cavity was found in the tubercular mass, which was located opposite the fifth rib, but one dram of iodoform powder was placed in the center of this mass and the wound in the lung firmly packed with iodoform gauze. The patient recovered and gave no evidence of tuberculosis at the time of the report.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

Naentjens reports a similar case in which a small swelling appeared in the axilla during the course of a slowly progressing pulmonary tuberculosis with cavity formation. This swelling was incised, found to contain pus and to communicate with the lung cavity. The lung cavity was opened and the wound tamponed with iodoform. Sinus persists. Patient improved but not well.

Malbot reports a case of tuberculosis in both lungs. In left upper lobe a superficial cavity had led to inflammation in the skin over second intercostal space. A free incision in second intercostal space opened lung cavity.

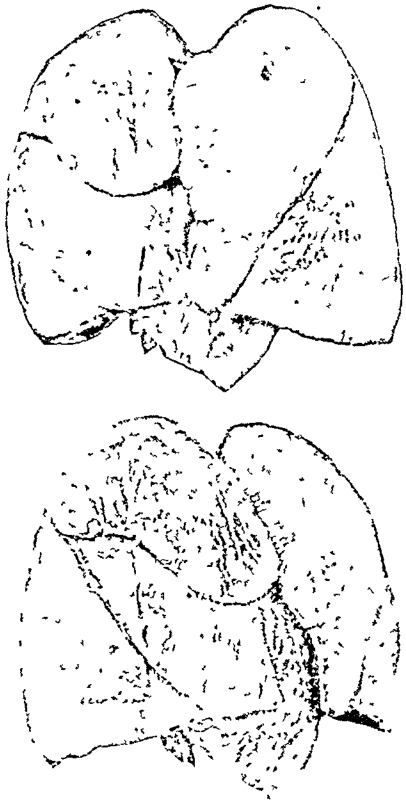

Fig 1.—Normal lungs with bronchi and blood vessels filled with Kaiserling solution. Anterior views

Recovery in three months with an improvement in his general condition.

Freyhan has collected 13 cases in which cavities of the lung had been drained. Two recovered and the remainder died either immediately from the operation, or at varying intervals after the operation from tuberculosis. One of these cases of recovery is that of Sonnenberg, included under the table of Tuffier.

Wills reports 2 cases in which the drainage of tubercular cavities in the base of the lung resulted in the recovery of the patients from their tuberculosis. He advises the general application of the operation.

Turban proposes to attain a condition of rest and furnish conditions favorable for cicatrization of cavities and areas of destruction by extensive thoracoplasty, in which a number of ribs are excised in considerable part and the chest wall is allowed to fall in on the contracting lung. This operation is entirely extra-pleural.

Spengler has operated according to the same method.

Porrit reports three cases operated on by this method, combined with excision of lung tissue with three deaths.

Franke has combined the drainage of a cavity with thoracoplasty and obtained an improvement in the condition of the patient, but the sinus persisted for two years, when the patient died of an intercurrent disease.

Garre has recently stated that operation for pulmonary tuberculosis is indicated under three conditions: 1. The broad opening, drainage and tamponage of a cavity is justified in those cases where there is a damming up and decomposition through mixed infection by the pyogenic cocci and the appearance of septic fever. 2. The broad exposure, excision of infiltrated lung and extensive thoracoplasty is indicated where isolated cavities exist and where the tubercular focus is limited to the lower lobe. 3. The immobilization of the chest wall or of the lung is recommended by the production of an artificial pneumothorax according to the method of Murphy.

Quincke, who has made the most signal contributions to the surgery of the lung, recommends immobilization of chest by thoracoplasty when the lesion is located in the apex. He has drained cavities with unfavorable results. He believes that only the fibroid type of phthisis should be subjected to operation, and then to the operation of immobilization.

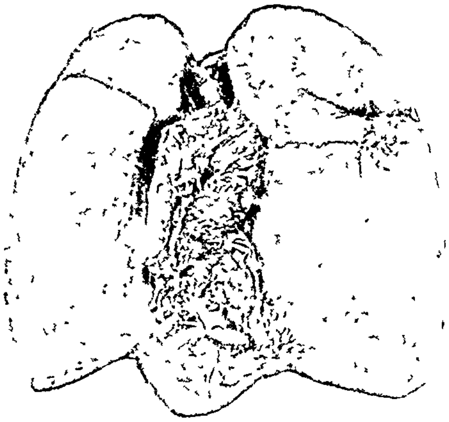

Fig 2—Normal lungs (Posterior view.) Shows the high position of the fissures posteriorly. The irregularity in the right lung is due to an adhesion and to a creasing during the hardening process

Franke joins with Quincke in this belief.

Hearne gives as one of the indications for surgical intervention in diseases of the lung, a single tubercular abscess with retained secretions, high fever and a localized tubercular involvement of the lung tissue.

Murphy has recommended the complete immobilization of the lung by injecting nitrogen gas into the pleural cavity for the purpose of inducing an artificial pneumothorax. By this means the lung is completely collapsed against the spinal column.

Lemke reported 53 cases in 1899 treated by this method with results which seemed to be favorable. Dr. Lemke has stated in a recent personal letter on this subject that he has been using the method continuously during the past four years and that his results are very gratifying.

POSTMORTEM INVESTIGATIONS.

With a view to determining the possibilities of operative interference in pulmonary tuberculosis, I have spent some time during the past year and a half in the study of the lesion as presented in the autopsy room and the hospital wards. This study has been pursued in autopsy material by serial sections made from lungs prepared as follows: The thoracic contents were removed *in toto,* then the bronchi and blood vessels were filled with a Kaiserling solution to a degree that would restore the size of the lung to that which it possessed in the living state. The lungs were then immersed in Kaiserling solution until hardened. Normal relations were preserved in this way and the lesion studied in serial section. In the pursuit of this study I am greatly indebted to Dr. B. F. Lyle, physician, and Dr. Louis E. Cook, pathologist, to the Cincinnati Branch Hospital for contagious diseases. The study of clinical material has been conducted through the further kindness of Dr. Lyle as a review and statistical arrangement of 978 cases of pulmonary tuberculosis treated at this hospital during the past five years.

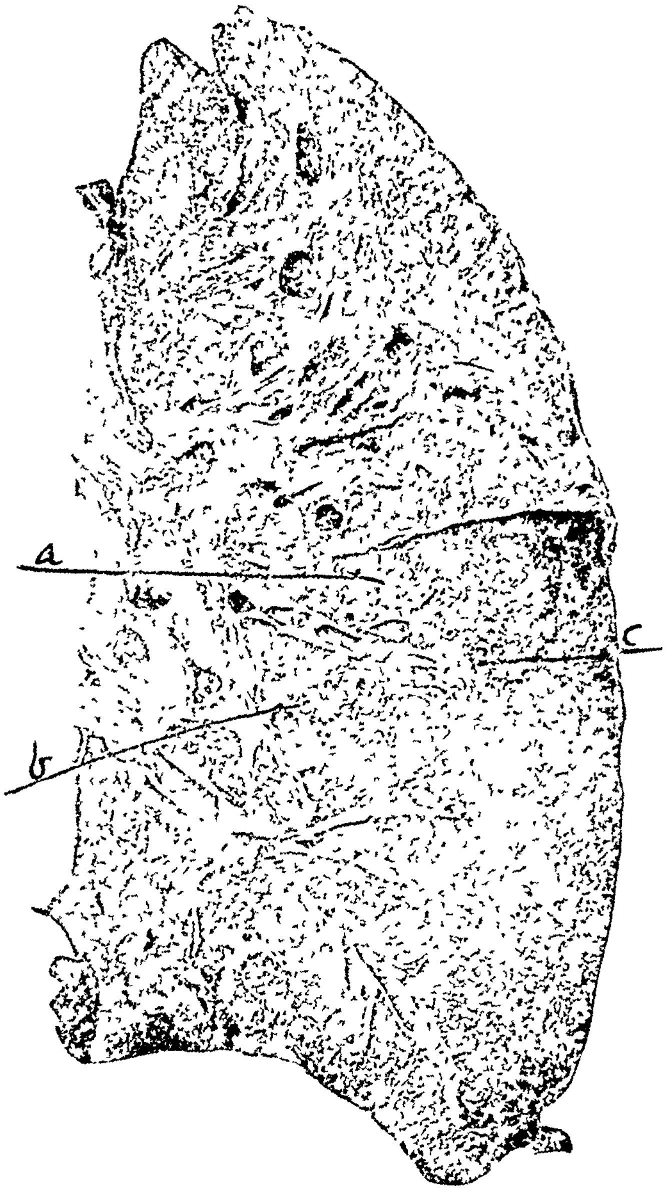

Fig 3—Tubercular lung. The lesion was diagnosed as a lesion confined absolutely to the upper part of the upper lobe No refinement of physical diagnosis could have detected the tubercles at *a, b* and *c.*

It has been my purpose to determine the most common location of the pulmonary tubercular lesion; the extent of lung tissue involved in the course of the development of the different stages of the disease; the location of the secondary involvement; the possibility of excising the lesion in its first or second stage; the presence and extent of pleuritic adhesions; the location of cavities, their accessibility, their operability; the frequency with which a tuberculous cavity becomes an acute abscess; and lastly, the nature of the usual septic process in phthisis.

A study of the distribution of the lesion would show that in 0.93 per cent. of the cases one apex alone was involved. In 1.0 per cent. both apices were involved. In 1.3 per cent. one upper lobe and the opposite apex were involved. In 3.6 per cent. both upper lobes were involved. In 8.5 per cent. two upper and one lower. In 2.6 per cent. one upper and one lower on the same side. In 1 per cent. the entire lung on one side and the apex on the opposite side. While in 74.9 per cent, of these cases both upper and both lower lobes were involved. In estimating the extent of lung involvement it has been considered that when the physical signs of tubercular involvement extended below the fifth rib posteriorly, that the apex of the lower lobe was involved. An apex involvement of the lower lobe is included under the heading of lower lobe involvement.

TABLE SHOWING DISTRIBUTION OF LESIONS

	Per Cent
One apex alone	.93
Two apices alone	1.00
One upper lobe alone	2.30
Two upper lobes alone	3.60
One upper and one lower in same side	2.60
Two upper and one lower	8.50
One upper and two lower	1.20
One upper and opposite apex	1.30
One upper and lower and opposite apex	1.00
Two upper and two lower	74.90

In 14.5 per cent. of the cases the patient gave a history of having had pleurisy at some time during the past few years, while physical examination revealed pleurisy in 30 per cent. of cases. *In none of the cases coming to autopsy were the lungs free from adhesions.*

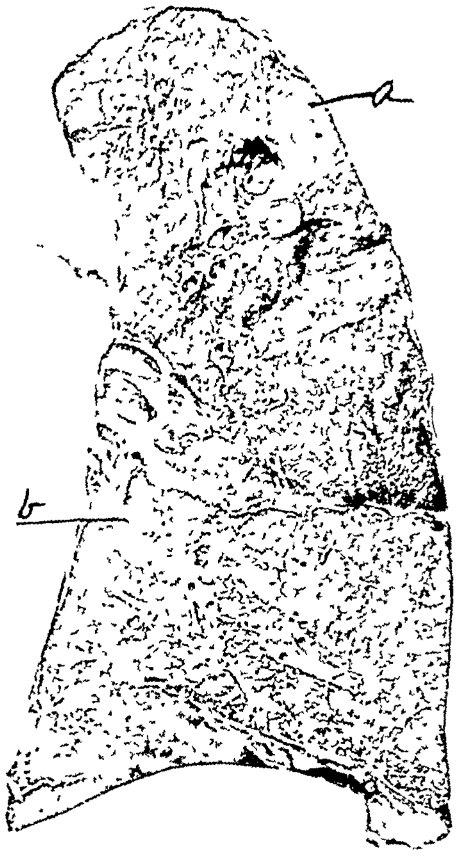

Fig. 4—Tubercular lung A most careful physical examination located the sole lesion at (*a*) with apex free At the autopsy only one other area was found at (*b*), so remote from the surface that no clinician could have detected it.

Emaciation of a pronounced character was present in 82.6 per cent. of cases, slight in 14.6 per cent. and absent in 2.8 per cent.

This table of statistics will show that the majority of the cases treated in this hospital are advanced cases of pulmonary tuberculosis, but it must be remembered that *every case treated* at this hospital is admitted on his first application for medical aid and that these physical examinations are made at the time of application. Furthermore, I should like to append a statement that the recorded results of physical examination made by Dr. Lyle confirm so perfectly in every case of death to the autopsy findings that I have the very greatest faith in the entire accuracy of the records of those cases in which no autopsy was made. It is a fact demonstrated by this table that patients apply late for medical aid in pulmonary tuberculosis, and I believe that if we are going to recommend surgical intervention in this disease that it must be applicable to hospital cases as they apply for treatment, and that these statistics will possess surgical value.

THE QUESTION OF EXCISION.

The surgical results obtained by the excision of tubercular foci in any part of the body seem to depend entirely upon the completeness with which the tubercular disease is removed. It must necessarily follow that good results from the excision of a tubercular focus in lung tissue must depend entirely on, 1, the complete excision of the diseased focus; 2, the absence of other foci in other parts of the lungs which will serve as centers of infection quite as dangerous to the individual as that which is excised. The entire tuberculous lesion in the lung must be excised.

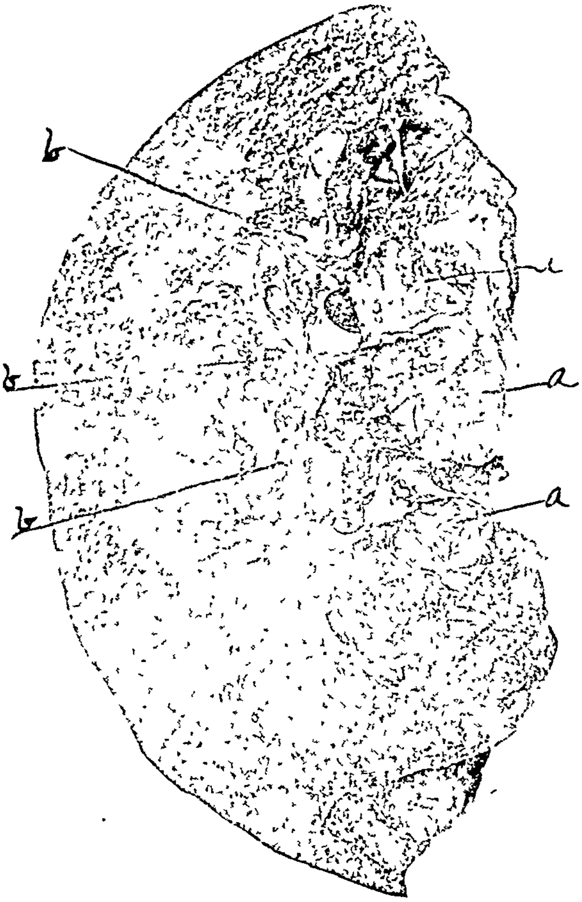

Fig. 5.—Tubercular lung, with extensive involvement of the tracheal, bronchial, and peribronchial lymph nodes, *a*, *b*. Excision impossible.

The operation of excision will manifestly be excluded from consideration in cases showing involvement of all four lobes (74.9 per cent.), in involvement of an upper and lower (2.6 per cent.), in two upper and one lower (8.5 per cent.), one entire side and the opposite apex (1.3 per cent.), and when both upper lobes are involved (3.6 per cent.). Autopsy findings would indicate, furthermore, that when a tuberculous process has invaded an entire upper lobe (2.3 per cent.) there are probably foci elsewhere in the lungs, which will render this lesion likewise inoperable. The sum total of the cases that will be inoperable from the view point of excision is 98 per cent. Apex cases alone, which constitute the remaining 2 per cent. of cases, can be looked upon as cases suitable for excision. This percentage is very small. The percentage would be somewhat raised should cases seen in private practice be arranged in statistical form, yet it would be unwise for us to allow our surgical zeal to obscure our better judgment and cause us to forget that a very large percentage of these cases of apex tuberculosis, as well as many presenting an extensive lung involvement, are cured by climatic, dietetic and hygienic treatment.

It is advised repeatedly by writers on this subject that the operation of excision should be practiced only on those cases presenting isolated circumscribed tubercular involvement of the lung tissue or in isolated cavities. That this condition rarely exists pathologically and that such a diagnosis absolutely can not be made is a fact that has been demonstrated repeatedly in the past and which is demonstrated again by my own specimens and physical examinations. It is impossible that six or sixty miliary tubercles distributed throughout the lower lobe of a lung or located 1 c.m. beyond the line of incision that would be indicated by physical signs could be detected by any known clinical method. An excision of only a portion of a pulmonary tuberculous lesion would be useless if not positively harmful. A tuberculosis confined to one apex alone without tuberculosis in other parts of the lung would certainly be a lucky condition, and we may not operate with a chance of luck alone in our favor. As far as I know the only cases that have thus far been treated by the method of excision are those of Tuffier, Doyen and Lawson. Of these only one was successful, and microscopic examination in this case revealed only an induration of the excised lung tissue.

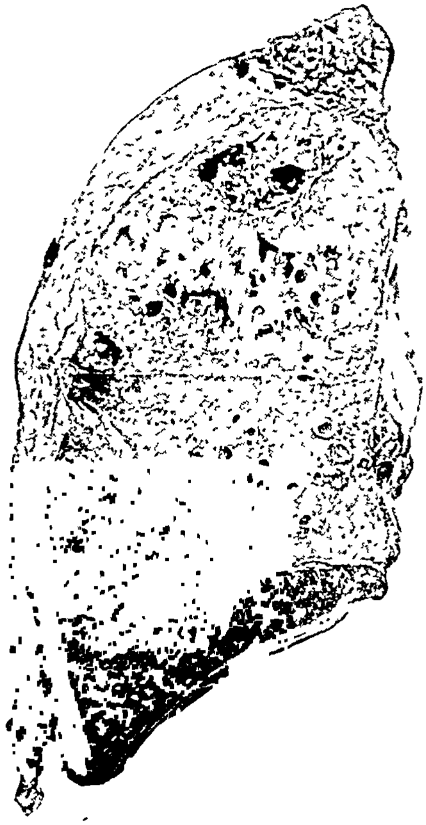

Fig. 6.—Tubercular lung. Entire upper lobe one mass of intercommunicating cavities, middle lobe solidly pneumonic, lower lobe normal.

Excision of tubercular foci in the lung would seem to be both impossible and irrational.

THE DRAINAGE OF CAVITIES.

The second surgical procedure that will claim our attention is the drainage of tubercular cavities. This is practiced, 1, to promote cicatrization; 2, to liberate pent-up pyogenic secretions; 3, to cause cavities left by a healed tuberculosis to cicatrize. A tubercular cavity in the lung is a result of the necrotic element in the tuberculous lesion. Tubercle bacilli lodge in a number of spots in the lung structure, each perhaps separated from another by a varying number of millimeters, and typical miliary tubercles develop. Each tubercle possesses a characteristic globular form about the size of a millet seed; it is made up of an aggregation of epithelioid small round and giant cells; these cells are supported by a stroma, the structure is devoid of blood vessels and the center is usually occupied by caseous material.

Among the many characteristics of a miliary tubercle two are of particular importance in the present study: 1, the absence of blood vessels in its structure; 2, the presence of the toxin forming tubercle bacillus. The entire nutrition of the cells which make up the structure of the tubercle must be carried on by diffusion or by percolation of the body juices from its surface. A poor nutrition, one most marked in the center of the globular mass of cells, is apparent. Added to this burden is the degenerative influence of the toxalbumin of the tubercle bacillus, and the result is invariably a peculiar type of necrosis known as cheesy degeneration. This occurs in the center of the tubercle. The miliary tubercle becomes divided into a crust of tubercular tissue which grows peripherally and in which the bacilli are active and a central caseous mass. Approximated tubercles fuse together by this peripheral growth and form large masses of necrotic cheesy matter. The escape of such a tubercular mass by way of the air passages leaves a ragged hole in the lung tissue. Such cavities have rough, irregular walls made up of cheesy material, which by crumbling away gradually increases the size of the cavity. They contain cheesy matter, detritus, serum, mucus and sometimes pus. Outside of the lining cheesy layer is a thickness of 1 to 4 c.m., which is made up of typical tubercular tissue without blood vessels, a layer of active tubercular extension most active in the portion most remote from the cavity. When nature fights a fairly good battle varying amounts of connective tissue are deposited in this layer, even to the complete arrest of the tubercular process.

To sum up, we have a cavity with a non-vascular, therefore non-regenerative wall of tubercular tissue which has a constant tendency to extend peripherally and a lining of dead tissue containing no germs of the disease. In a simple pyogenic abscess the seat of germ activity is in the lining membrane, the wall of the abscess cavity is filled with budding blood vessels and reparative granulation tissue cells, and all surrounding parts not already necrotic are well supplied with nutrition. Conditions are entirely dissimilar, and it would seem irrational from the start to drain a tubercular cavity simply because the drainage of simple abscesses has given such brilliant results. Drainage alone can accomplish nothing since tubercular cavities usually contain innocuous material, and such drainage can in no way affect the surrounding tubercular tissue. In the next place, there is no tendency to the formation of granulation tissue on the interior of such cavity, and in those cases in which it might perchance occur anatomic conditions are opposed to the contraction of the cavity. The apex of the lung is encased in a firm, unyielding bony box. Added to this, pleuritic adhesions always glue the surface of the lung to the interior of this box and the reparative formation of cicatricial tissue will always pull toward the long surface, thereby artificially enlarging the size of the cavity instead of promoting healing (Gerulanos, Quincke). An incision into such a cavity could not be expected to accomplish much.

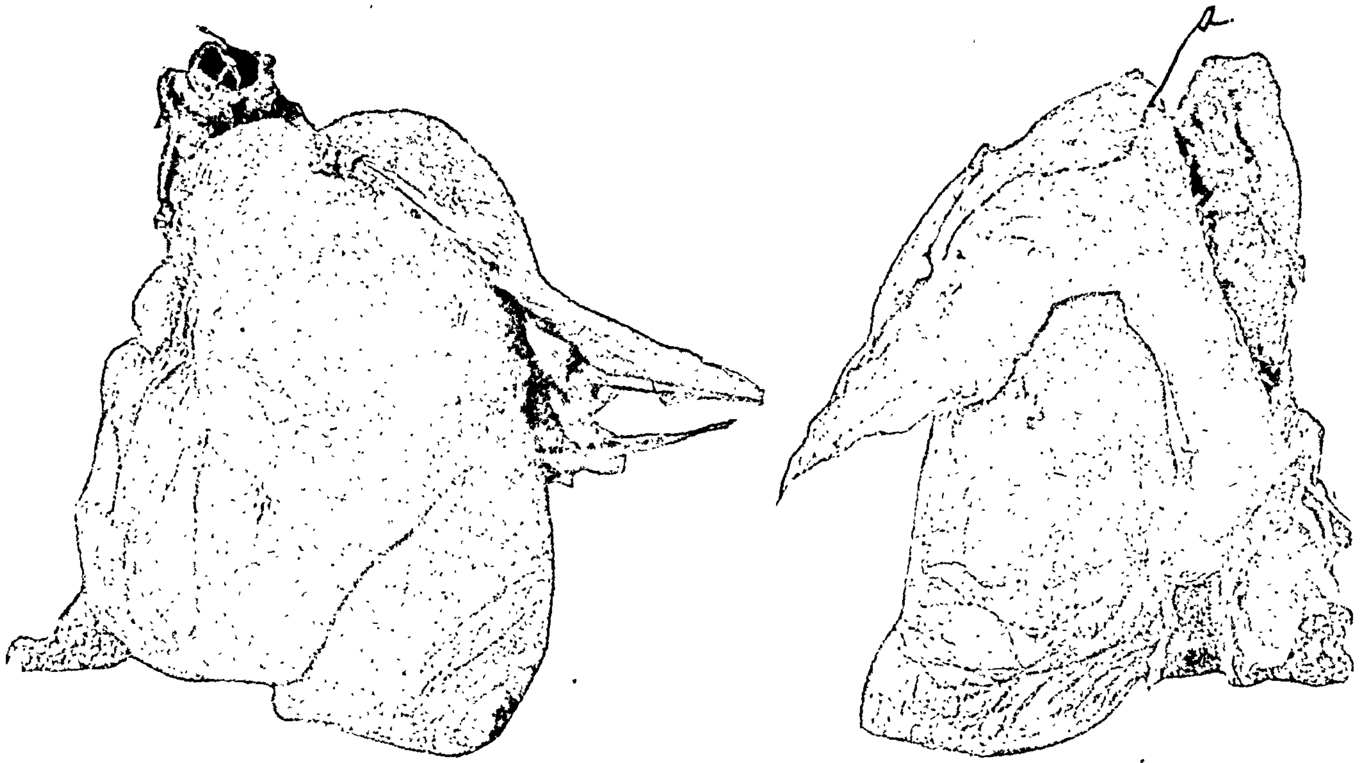

Fig. 7.—Tubercular lung. The greater part of both lungs are solidly tubercular, yet there are no pleuritic adhesions below the extreme apex. Adhesions only above line *a*.

It has been stated that the operative treatment of tuberculous cavities becomes imperative in those cases in which the cavity secretions become retained and infected by the pyogenic germs, and that we are in reality called upon to treat an acute abscess of the lung

(Kummell, Garré, Hearne). Here arises that great subject of lung sepsis in pulmonary tuberculosis which I can not hope to discuss further than to make the following statements regarding this question of retained and infected secretions: 1. The vast majority of lung cavities are located in the apex or in the upper lobe of the lung, sites shown by Quincke to be most favorable to drainage through a bronchus. 2. In the 978 cases studied, Dr. Lyle has not seen a single one in which a cavity has been the seat of such an infection and operation a possible element in the relief of symptoms. 3. The very chemic nature of caseous material (representing as it does a product so low in the scale that it is incapable of further disintegration) makes it an unfavorable if not actually an impossible culture medium for pyogenic germs. 4. Should such infection and decomposition occur often or at all, patients with cavities would certainly have very bad breaths. This is not true. Cavity patients rarely have a stinking breath. 5. Mixed infection in the area of active tubercular inflammation—the active septic pneumonia—in lung tissue not in cavity, is unquestionably the element that plays the part of importance in the septic cases. 6. I present the temperature charts of three patients who have cavities for five, three and two years respectively. These temperature curves are merely samples of all these cases. They are neither high nor septic, and these men have been subjected to all of the vicissitudes of the climatic conditions. 7. The majority of tubercular cases do not run high temperatures at any time. In this series 25.5 per cent. of the cases treated run an average daily and weekly temperature below 99 F., 24 per cent. between 99 and 100 F., 20.7 per cent. between 100 and 101, 14.8 per cent. between 101 and 102, 10.4 per cent. between 102 and 103, while 5.2 per cent. gave an average daily temperature above 103. In general it may be said that in 70 per cent. of cases the temperature was never above 101, and in 85 per cent. of cases never above 102. Furthermore, septic temperatures are not found. 8. The persistence of a sinus is the usual result after drainage, and most of the patients so treated have been more annoyed by this than by the severe symptoms; some have said that death was preferable.

It has been said that those cavities occurring in individuals in which the tuberculosis has become entirely healed can be closed down by operative treatment and the patient cured of his cavity. 1. In the first place such cavities do not usually give these patients great annoyance, a fact abundantly supported by clinical experience and by the autopsy reports of Furbringer and Von Leyden, who have frequently found isolated cavities which had existed for a great many years in the apices of very healthy-looking young people. 2. Should we grant the possibility of effecting a cure in this way, it would be impossible to say just when the tuberculous process has become healed. 3. Operative interference in a cavity that had progressed just short of complete healing has resulted in the development of disseminated miliary tuberculosis and hastened death (Mosler, Kurz). Finally, should it be granted that certain cavities might be opened to operative treatment by drainage there would yet remain the great difficulty of selecting these cases by physical examination. The value of operation on a supposed single cavity would be annulled by the discovery at the time of operation of other smaller cavities which could not have been diagnosed by known physical signs. The Roentgen ray has failed to detect cavities with a degree of accuracy that would give the method diagnostic value.

Sarfert, who has been a zealous advocate of the operative treatment of pulmonary tuberculosis, has been forced to acknowledge that perhaps among hundreds of cases of cavity only a single one may be suitable for operation. Borchert states that the discovery of tubercle bacilli in the sputum is an absolute contraindication to operative procedure, even when the original condition was known to be a chronic simple abscess and the tubercular infection secondary. Körte arrives at similar conclusions. The evidence against the drainage of tubercular cavities would seem to be so overwhelming that I believe the method should not be included within the scope of surgical attack upon the lung.

While the purpose of my paper in reality ends with this attempt to demonstrate that the tubercular lesion is an inoperable one from the view point of excision and the drainage of cavities, I beg your indulgence for the very brief consideration of two other surgical methods of treatment which I believe to possess value.

THE NITROGEN COMPRESSION METHOD.

The treatment of tuberculosis of the lungs by compression with nitrogen, after the method of Murphy, has now been employed by several observers, notably by Lemke, for four years, and the results obtained thus far are certainly very promising. Any method for the treatment of this extremely chronic disease can not be said to be established until a sufficient number of years have elapsed to determine the existence of a permanent cure. The method of nitrogen compression is on trial and seems to be a rational procedure.

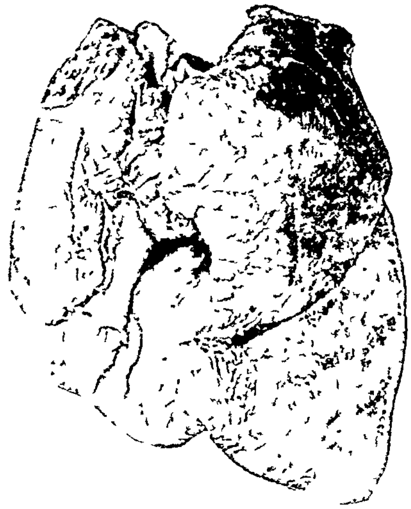

Fig 8.—Tubercular lungs. Right lung had been compressed to spinal column for a long time by a hydro pneumothorax

The good effects of compression, locally, as given by Lemke, are brought about by the limitation of areas of disease already existing by, 1, favoring fibrosis in and about these areas; 2, by occluding the avenues of the dissemination of the virus, and 3, by compressing cavities to enable them, mechanically, to heal. Other effects of compression are due to, 1, rest to the organ as a whole; 2, emptying of secretions; 3, prevention or diminution of absorption of toxic bodies; 4, prevention of secondary infections; 5, the diminished tendency to hemorrhage.

Granted the truth of all these statements and the safety of the operative procedure, the question of the applicability of the method must naturally arise. The application of the method presupposes a pleural cavity, into which the nitrogen gas can be injected in sufficient quantity and diffusion to cause a collapse of the lung. We all know perfectly well that there are many cases in which there is no pleural cavity at all, and that the vast majority of cases of advanced tuberculosis possess adhesions of varying degree. Approximately, 90 per cent. of the autopsy cases examined presented adhesions so extensive that collapse of the lung would have been impossible by the nitrogen method. In others, the lungs might have been collapsed below the level of the fourth or fifth rib, but the entire apex, that portion inclosed in the truly rigid costal box, could not have been influenced much by the pressure. One case would seem to demonstrate that disseminated or irregular adhesions need not be a barrier to the employment of the injection. This specimen was taken from a case of tuberculosis that had suffered a complicating pneumothorax. The old adhesions between the visceral and parietal pleura were so pulled upon by the collapsing force that they were stretched to a band 5 c.m. long. A similar stretching of bands might be expected to occur after nitrogen injection.

Autopsy findings demonstrate another condition of great practical importance, namely, that pleuritic adhesions are usually not coextensive with the pulmonary lesion even when this lesion underlies the parietal pleura. In illustration of this point I would present a photograph (Fig. 7) of a lung in which the entire upper and the greater part of the lower lobe are the seat of tubercular consolidation and extensive destruction. The parietal and visceral pleura are adherent, however, only at the apex, as indicated by the lines front and back.

In the majority of lungs the adhesions are more or less distributed over the surface of the lung. but not usually in the form of complete adhesions which obliterate the pleural cavity. A patch of adhesions will be found here, a free area there.

Sarfert makes the positive statement that autopsies have proven that adhesions and pleural thickening always occurs in chronic cases, at least down to the third rib. Sonnenberg has agreed with this finding. The two apices which I have just presented, the one with a stretched band and the other a very limited area of adhesions, and both in very chronic cases with cavity formation, are merely illustrations of a number of such findings in my experience, and will serve to show that we can rely no more on the possible presence of adhesions than upon signs for the determination of their absence or their distribution.

In seeking to ascertain the value of history and physical examination in determining which cases would be suitable for nitrogen injection this portion of the history records was also reviewed. Only 14.5 per cent. of the cases gave a history of ever having had pleurisy, and in some of these the attack had occurred years before the existing tubercular disease of the lung. Physical examination revealed pleuritic friction sounds in 30 per cent. of the cases. The proportion of cases that do actually suffer from pleuritic adhesions is so high and completely obliterating adhesions have so often been found on autopsy in lungs that gave neither history nor physical evidence of pleurisy during life, that neither element in the examination can be accepted as possessing the slightest value.

Certain selected cases of pulmonary tuberculosis may be rationally treated by nitrogen compression. yet it must be stated, 1, that incipient and apex cases of tuberculosis do not require such treatment; 2, that pleuritic adhesions may entirely obliterate the pleural cavity; 3, that irregularly distributed adhesions may render collapse imperfect and inefficient; 4, that physical examination and the history of pleurisy can not be relied upon in determining the applicability of the method; 5, that autopsy findings demonstrate conclusively that pleuritic adhesions are not coextensive with the tubercular process; 6, that autopsy findings do not establish more than a probability of finding adhesions over a lesion of a certain degree.

The following conclusions have been reached from the present study as having particular bearing on this subject:

1. One lung which had been compressed and totally retracted in a hydropneumothorax for a long time has been studied in its gross and microscopic detail and bears out the anatomic statements of Lemke. It shows fibroid change, no secretions. contracting cavities and a quiescent tubercular process (Figs. 8 and 9).

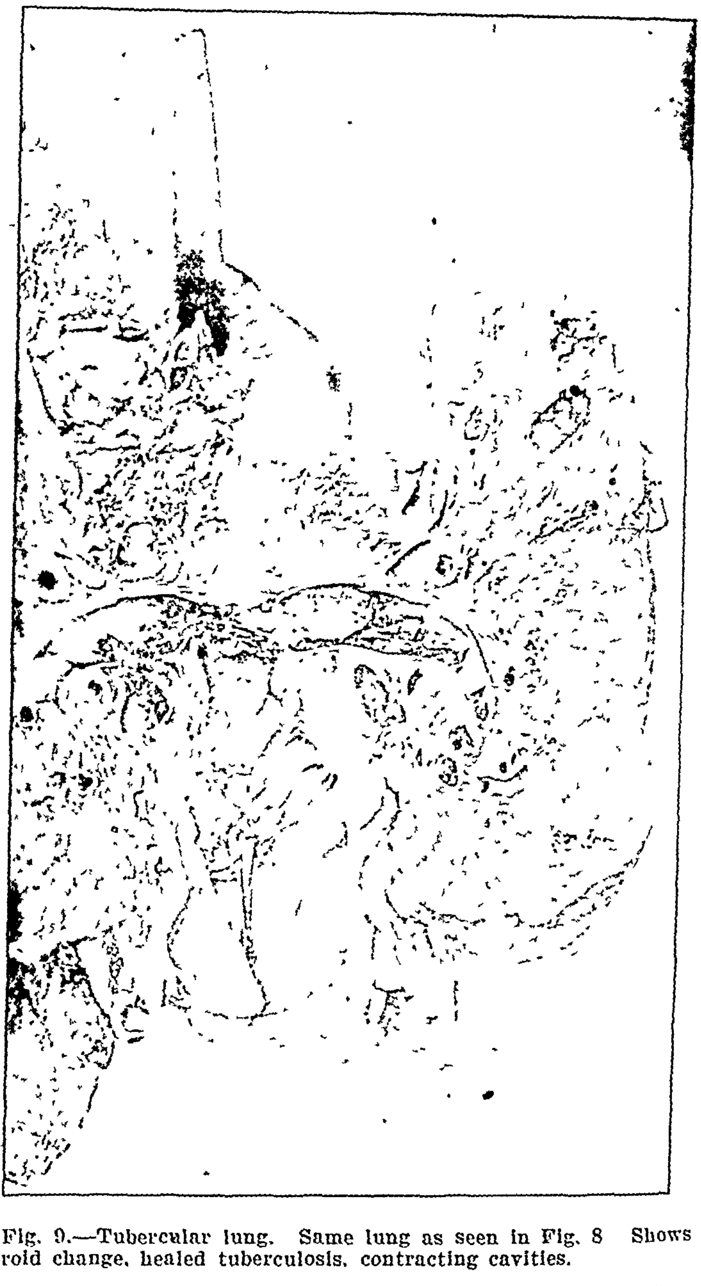

Fig. 9.—Tubercular lung. Same lung as seen in Fig. 8 Shows fibroid change. healed tuberculosis. contracting cavities.

2. A second lung of a similar history and appearance was treated by injecting Kaiserling solution into the trachea. The entirely collapsed lung promptly dilated to the size of a normal healthy lung, despite the fact that it had been collapsed for a long time and that the pleura was greatly thickened.

3. A third case of pneumothorax has furnished Fig. 4. The lung has collapsed and old adhesions at the apex had been so strongly pulled on by the collapsing force that they had been stretched to a length of 5 c.m. Similar stretching might be rationally expected after nitrogen injection.

4. A large percentage of cases have no pleural cavity into which nitrogen gas could be injected.

5. The extent and degree of pleuritic adhesions is extremely variable, is not uniformly present under given pathologic conditions and is rarely coextensive with the tubercular involvement of the lung (Fig. 7).

6. Neither the history of pleurisy nor the physical examination possess the slightest value in determining the presence or absence of pleurisy. In the 978 cases reviewed, only 14.5 per cent. gave a history of pleurisy, and in 30 per cent. pleurisy was diagnosed by physical examination. In every case of autopsy pleuritic adhesions were present and in a high percentage of these cases such did not appear in the history or physical examination.

7. Apex and incipient cases of tuberculosis do not require such treatment by compression.

8. The table presented would show that only about 4 per cent. of all cases would be typical candidates for this form of treatment. The method may be employed, however, in double-sided tuberculosis.

THORACOPLASTY.

The unyielding character of the bony casement of the lung has long been looked on as a potent factor in impeding the healing of cavities. Quincke called attention to the uselessness of making a simple incision into an apex cavity after removing 2 to 6 c.m. of the first rib, and proposed first drainage from the most dependent part of the cavity, then an extra-pleural operation of thoracoplasty. It was proposed to remove the greater part of a great number of ribs over the diseased section of the lung, thus enabling the chest wall to fall in on the lung and the cavities to cicatrize. Turban has performed such an operation on a 21-year-old boy, and this patient was still in good health two and one-half years after the operation. Tubercle bacilli have always been present, however, in the sputum, and the tuberculosis certainly can not be said to be cured. Spengler has operated in a similar manner and reported healing. Franke reported improvement after such an operation, but a sinus persisted and tuberculosis was found after death from an intercurrent disease.

This method of treatment would seem to be based on precisely the same sound principles as the nitrogen method of Murphy, but is, of course, a very extensive operative procedure. It would, therefore, be irrational to use this method when the safe method of nitrogen-gas compression is available, but it seems to me that in those cases of one-sided pulmonary tuberculosis to which the nitrogen compression is impossible of application, this would be a rational method of treatment when climatic and dietetic measures have failed to arrest the progress of the disease.

The arguments to be advanced against such an operation are:

1. The severity of this operative procedure which to be efficient must remove large sections of a number of ribs. This fact alone will prevent a general use of the method.

2. It will always be done in patients much reduced in vitality. Among the 978 patients whose histories were consulted, 82.6 per cent. presented marked emaciation, 14.6 per cent. slight emaciation and 2.8 per cent. no emaciation. This will give a high mortality in the cases operated on and cause us to withhold operative treatment in a high percentage.

3. Animal experiments which I have conducted in dogs have demonstrated that while such extensive resection of ribs enables the chest wall to fall in satisfactorily, it does not secure the complete rest to the lung that will be given by the nitrogen method. In these dogs the chest wall on the side of resection moved in and out with a considerable excursion and the lung certainly filled to a limited extent with each inspiratory act.

4. Climatic treatment renders a fair percentage of cures among the class of cases that would be considered suitable for this operation.

5. The table presented for the demonstration of the distribution of the lesion shows only 2.6 per cent. of all cases to be confined to one side alone, and 1 per cent. in which one entire side and the opposite apex were involved. The percentage of cases primarily candidates for this operation will therefore be exceedingly small, and this small percentage will be still further lessened by considerations already given.

SUMMARY.

The points to which it has been my desire to call attention are:

1. The excision of pulmonary tubercular disease.
2. The drainage of tubercular cavities.
3. The nitrogen compression method of Murphy.

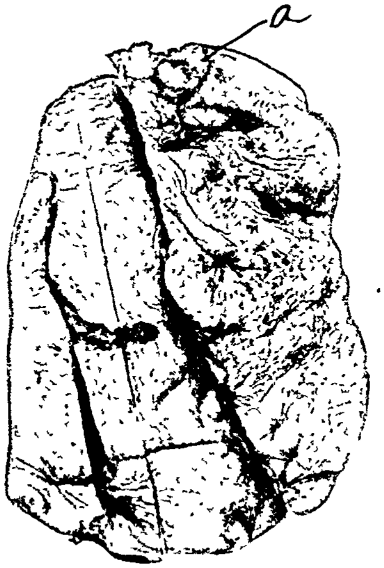

Fig 10.—Healed tubercular focus at the apex (*a*). A counterpart of the case of Tuffier which was successful.

4. The treatment of tuberculosis by extensive thoracoplasty.

The conclusions that will be drawn from the paper are:

1. The excision of the pulmonary lesion is, in the vast majority of cases, both impossible and irrational.

2. The incision and drainage of tuberculous cavities in the lung does not seem to be a justifiable operation.

3. The nitrogen compression method of Murphy is a rational procedure in a limited number of selected cases, its application is safe, the effect on the tubercular lung seems favorable and the reported results are encouraging.

4. Thoracoplasty, while based on the same sound principles that give value to the nitrogen method, is an extensive operative procedure involving great risk to life, and furnishes slight promise of improving the percentage of cures obtained by climatic treatment.

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DISCUSSION

ON THE PAPERS OF DRS. WILLARD, M'RAE AND WHITACRE.

Dr. Oliver C. Smith, Hartford, Conn.—I have operated on and published the results of three cases of pulmonary abscess, two of which followed pneumonia, the third followed buccal abscess and was exceedingly severe. The highly infectious pus found its way into the lung tissue by inspiration. The patient grew rapidly worse, was harassed by violent and prolonged paroxysms of coughing accompanied by profuse, offensive and purulent expectoration. I believe this character of cough is highly diagnostic of pulmonary abscess. The patient ran a very high temperature, becoming more and more aseptic and exhausted. It became apparent that he could not live unless a radical procedure was resorted to. Chloroform was administered, two ribs resected and the lung explored. The pulmonary and costal layers of pleura were adherent. The index finger was introduced deeply into the lung; the abscess cavity discovered. A small amount of pus only appeared at the time, but profuse drainage immediately ensued. The patient bore the operation well, and although the temperature ran a septic course several days, he eventually made a complete recovery. I believe the operation of pneumotomy for pulmonary abscess is a life-saving performance and one that has been neglected. The general practitioner frequently fails to make an early diagnosis and valuable time is lost. As to operating on tubercular cavities it is doubtless correct that the field is a very limited one.

Dr. W. J. Mayo, Rochester, Minn.—In reference to securing suitable space to work in, I think we should resect portions of at least two ribs, and if on opening the abscess cavity the drainage is not free, resect still more, as proper drainage is the most important element. In reference to adhesions, it has been our experience that frequently none exist, and the lung looks comparatively healthy at the point at which the pleura is exposed. To secure adhesions we have found the most suitable way was to pack wet pieces of gauze directly onto the parietal pleura and lung, tying them down loosely with catgut sutures. In this way you secure a window through which the lung can be opened at once, if necessary. By these pieces of gauze the lung will be held closely to the desired point. In reference to the cavities one will frequently put a finger in and find bands running across the cavity, which one should be very cautious about breaking. They are the remains of bronchi and sometimes contain a blood vessel. I once broke one and had a tremendous hemorrhage, which was finally controlled by forceps and gauze packing.

Dr. Richard H. Gibbons, Scranton, Pa.—The experiments on animals are very different from the experience we get in traumatic injury of the lung, of which we have many cases in the anthracite coal regions involving the lung structure. We do not get the sudden deaths as often as the experiments on animals would suggest. I have seen many cases in the mining regions where the lung was perforated, but immediate death did not take place, and I have seen them where they would get general emphysema after which the symptoms would subside, although pneumonia or infection might often in the end result in death. If we open up the chest thoroughly we do not run as much risk as in making a small opening. I have taken coal from the pleural cavity and the lung repeatedly. I will not say that my patients all got well, but I will report a case which shows that perforation of the lung is not necessarily followed by death. In this case I did a very large resection of the ribs and attempted Estlander's operation. The cavity was an old one within the pleura, and the late Dr. DeCosta, who had seen the case with me, recommended non-interference. The late Dr. Pepper and Dr. Deaver also saw the case, and they recommended that I should pursue the course that I had proposed. With Deaver's assistance I operated and the man did well. The cavity, at first large, became narrow and very tortuous. I intrusted the packing to one of my assistants. He cut the gauze off squarely—gauze for packing should be torn lengthwise—as he opened the package, and one day after packing the wound he sent for me hurriedly owing to the patient having been seized by marked symptoms of suffocation. The symptoms suggested perforation of the lung, caused by forcing the packing outside of the tract and into the lung tissue, the first stage of so-called lobular pneumonia being established and recognized when I arrived. This patient afterward developed violent coughing spells and repeatedly *expectorated* large fragments of the gauze used in packing during these choking spells. One of the pieces of gauze coughed up was seven inches in length. The gauze being so thoroughly prepared was the only thing that saved the man's life and he has remained perfectly well, now seven years afterward.

Dr. Dudley P. Allen, Cleveland—In reaching the lung when there are no adhesions holding it to the chest wall I have found great aid in bringing the patient to the edge of the table and rolling him over so that the opening in the chest wall is at the most dependent point. With a patient in this position the weight of the tissues in the thorax by gravity tends to draw them toward the side which has been opened. This position greatly facilitates respiration, whereas if the patient lies with the operated side upward the weight of the pulmonary tissues tend toward the unaffected side increasing the difficulty of respiration. When the patient is turned as has been said, with the operated side in a dependent position, the weight of the pulmonary tissues brings the lung against the finger, and it is much more easy to palpate an extensive portion of the lung than it is in any other position. I mention this maneuver in connection with this discussion since anything which facilitates operations upon the lung is of value, recognizing the operation as we do as among those which are beset with considerable difficulty and danger.

Dr. D. W. Crouse, Waterloo, Iowa—I have an engineer under my care who had a two-inch square scantling run into his chest and passing out through the back. The case was not under my care for weeks, and for many days came very near dying. The scantling was pulled out, and a nail, which was in the scantling, tore the parts very badly. It is nearly a year since he was hurt, and I would like to know how to close the sinus that remains. The opening was clear through the body, and by using an injection in the wound in front I can still get a few drops of fluid out of the back. The bronchi seem to be still open, as the man can tell the nature of the wash I am using. The tube I employ is probably from one and one-half to two inches long, and, as there is still some discharge, we keep this tube in in order to keep it open. This case is not exactly germane to the subject of the paper, except in so far as it shows a very serious injury to the lung and the patient recovering from the same.

Dr. A. H. Ferguson, Chicago—Allow me to report a case of tubercular consolidation of a portion of the right lung successfully treated with iodoform introduced into the substance of the lung. It was in a young colored school teacher who presented himself at the Post-Graduate Hospital three years ago complaining of a large fluctuating abscess situated beneath his right pectoralis major muscle. On laying it open and thoroughly removing all diseased tissue with knife and scissors, the third and fourth ribs were found to be involved superficially to the extent of about an inch. Two weeks later consolidation of the middle lobe of the right lung was detected which had recently developed. He had pain, fever and rapid respiration. It was thought to be an abscess. On removing a section of the second and third ribs and passing my finger through the incised pleura above the consolidation, I could feel the upper portion of the lung to be apparently normal and found that the consolidation extended clear across the whole lung, making a complete diaphragm in the chest wall. The exploratory incision in the pleura was now closed and the consolidated area attacked through a lower incision which I extended down to the lung exposing a couple of inches of the solid mass. A large trocar and cannula was carefully inserted into it to the extent of about four inches, but no pus was found. A section of the lung tissue was then removed for microscopic examination, and a dram of iodoform left in the deeper recesses of the explored lung. Professor Klebs declared the specimen to be tubercular pneumonitis. The case then was treated as follows: Through a large cannula introduced with a trocar, a dram of iodoform was deposited into different parts of the consolidated mass twice a week for three months, at the end of which time all consolidation was gone and vesicular murmur returned into that portion of the lung that had been diseased. A late report finds that the case is apparently cured.

Dr. J. C. Oliver, Cincinnati—Dr. Whitacre's paper is certainly a very important and timely one because it supplies the final link in the chain of reasoning in regard to the surgery of the lung. It is particularly important because of the light it throws on tuberculous affections of these organs. This paper shows that it is possible to do a certain amount of surgery on the lung. In other words, there can be no doubt that from a purely surgical standpoint intervention is a feasible surgical possibility. But, basing his report on nearly a thousand cases of tuberculosis of the lung in which postmortem examinations were made, he comes to the conclusion that the proportion in which surgery could be of any possible benefit to the patient is extremely small, less than one per cent.

From these observations and statistics one may logically arrive at the conclusion that while surgical procedures are possible, they are not wise because of the very small proportion of cases in which any benefit can accrue to the patient. It seems demonstrated, therefore, that the surgery of pulmonary tuberculosis will be limited to a very small field and that the present attempts to invade these organs will not be capable of establishing these procedures on a sound surgical basis.

Dr. Jacob Frank, Chicago—I remember one case that did not get well where there were present periodical spells of coughing pus. I decided I would operate on the child just before coughing up one of these masses of pus, and accordingly the ribs were resected, but just as I was about to enter the pleura the child, by a vomit-cough effort, expelled the pus. Immediately the dulness on percussion disappeared. Thrusting the needle in every direction twenty or thirty times, failed to get any pus whatever. Later I became bolder and used my finger, but found no pus. It will not always be as easy to operate on the lung containing pus where the cavity is not rigid and firm, and I can see how easy it would be to go into the lung and open up such a case without finding it. The abscess cavity in the lung collapsed is quite a different proposition for the surgeon from one where the cavity is always full or partially full of pus and the walls through adhesions are well fixed and firm. It is just this latter form of abscesses that become a very simple procedure to open and evacuate, and I dare say most of the successful cases published are of this kind.

Dr. McRae, in closing—In collecting these cases I purposely excluded not only the tubercular and localized pleurisy cases, but also gangrene and septic pneumonias, only including abscess following lobar pneumonia. The remarks of Drs. Mayo and Frank are very important. I observe Dr. Frank did not establish adhesions first. Personally, I have been very much interested in studying these cases. Dr. Frank made a good point in emphasizing the difficulty of locating abscess cavities where there are no adhesions of pleuræ.

Dr. Whitacre, in closing—I would like to mention two points in connection with the paper on abscess of the lung. I believe that it is now becoming a well-recognized fact that a high percentage of cases of empyema have their origin in a small abscess of the lung which is located just beneath the pleura. These abscesses break through into the pleural cavity, produce an empyema and the case is so classed without reference to the primary seat of the suppurative focus. I have in the Pathologic Exhibit a specimen which shows such an abscess beautifully. I have seen two cases of empyema in which a bronchial fistula was present immediately after operation for the relief of the pleural collection and in which abscess of the lung undoubtedly preceded the empyema. The second point I wish to make is that cases of abscess of the lung recover under medical treatment and that surgical procedure should not be instituted until it is clearly demonstrated by many weeks of treatment that no progress is being made. During the past winter I have had two cases of abscess of the lung, each with one pint capacity, which I hoped to be able to operate on, but they both recovered perfectly without operation.

The case of tuberculosis, which Dr. Ferguson has referred to in his discussion of my paper, has interested me very much in the review of the literature on this subject. I am impressed, however, that this favorable result was a very happy chance, and that it should not be taken as an argument in favor of operating on tubercular lungs. I have referred to a specimen in my collection, which is to be found in the Pathologic Exhibit, in which there was, as nearly as it is possible to determine by physical examination, a circumscribed mass of tuberculosis of the same nature and in precisely the same location. On autopsy this mass was found, as located by physical examination, and all other parts of the lung were found to be entirely free from tubercular deposit except for one mass the size of an English walnut, which was found in the base of the lung at a point most remote from the chest wall and entirely beyond the possibility of detection by physical examination. Operation on what appeared to be the sole focus would have been useless.

Tuffier's case is frequently referred to as a successful case of excision. The complete report of the case is not made, however, and it is not always stated that this was a healed tuberculosis, that microscopic examination revealed only individual lung tissue. I do not believe that this case has any right to consideration as a successful one.

While it has now been definitely established that adhesions are not indispensable to operative attack on the lung, I have included this point in my investigation of case reports. I find, as was stated in the paper, that adhesions are by no means co-extensive with the tubercular process, and that neither our pathologic knowledge nor our present methods of physical examination will render information of value in determining either their presence or absence.

Removing Picric Acid Stains.—Brynk, in *Bull. Phar.*, recommends rubbing the skin or fabric with a solution of 10 parts of sodium benzoate and 40 parts of boric acid in 1000 parts of water.

THE DIAGNOSTIC IMPORTANCE OF KERATITIS PUNCTATA INTERNA (DESCEMETITIS).*

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The term keratitis punctata is applied to several very different conditions. We must distinguish between the true punctate inflammations, the keratitis punctata profunda, the keratitis punctata superficialis, etc., and that form which consists of deposits on the inner surface of the cornea. If we retain the term for this form we should define it as "keratitis punctata interna." This condition is also known by the name of descemetitis, and, while there are objections to this term, it is less liable to produce confusion, and for this reason and for the sake of brevity we shall use it in this paper.

In a paper published in the Archives of Ophthalmology[1] six years ago, I brought evidence to show that descemetitis occurs in every case of iritis. I divided the descemetitis into two forms—the coarse, which can be seen with the naked eye, and the fine, which is detected by means of strong convex lenses behind the ophthalmoscope. The former is occasional, the latter constant. It is the coarse variety only to which most writers refer under the term of descemetitis.

Concerning the position which these deposits take, little need be said. The coarser opacities are found chiefly or entirely in the lower half of the cornea, frequently arranged in the well-known triangular form. In rare cases the entire inner surface is covered. The fine opacities are also most abundant in the lower half, but frequently cover the upper half as well. Exceptional cases occur in which the spots cover an area more or less central. The largest spots rarely exceed one mm. in diameter and are usually round. In very rare cases they assume irregular forms and become much larger. In a case of tubercular iritis which recently came under my observation, they were so large and so much resembled the miliary tubercles on the surface of the iris that I assumed that they were likewise of a tubercular nature.

In order to learn the facts as to the occurrence of descemetitis in various diseases of the eye, I have carefully reviewed my case—histories both hospital and private for the past twelve years. This paper is a summary of these cases, together with the conclusions to which they lead. Assuming that my statement that descemetitis occurs in every case of iritis is accepted by all who have given this subject any study, I shall refrain from citing in this paper several hundred cases in which this condition depended upon iritis. I may add that observations since the publication of my former paper have corroborated the views then expressed. I have also omitted all cases of diffuse keratitis. At the same time I desire to state that I have never found descemetitis absent during the active period of this disease. Finally, before taking up the individual cases and conditions, I desire to state that the following notes are taken from my histories, many of which are unsatisfactory because incomplete, or because of the failure of patients to return.

A. CASES OF DESCEMETITIS WITHOUT OTHER DISEASE.

Case 1.—Mr. G., aged 30, was seen July 3, 1900. The sight of the left eye was blurred and the eye had been painful for two weeks. The pupil responded promptly to atropia. There was marked descemetitis. Atropin was ordered. Two days later there was no evidence of iritis, and the fundus appeared normal.

Case 2.—Miss R., white, aged 29, complained of her eye for ten days. There was descemetitis without any evidence of incipient iritis. No note of fundus. Patient seen once.

Case 3.—Mr. M. C. G. complained of the sight of bad vision in the left eye for one week. The pupil dilated freely under atropia. There was marked descemetitis occupying a small portion of the cornea just below the center. The image of the fundus was blurred, but appeared normal. Patient was seen but once.

In none of these cases were there notes of other evidences of uveitis. It is to be mentioned that in none is there a note as to the presence or absence of vitreous opacities. All of these cases were dispensary patients and seen only once or twice.

We may here add two cases in which the opacity of the cornea was so great as to prevent examination with the ophthalmoscope.

Case 4.—Mrs. H., aged 29; she had had recurrent inflammation of the right eye since childhood. The last attack began one week before she was seen by me. There was a diffuse opacity covering the lower half of the cornea (old diffuse keratitis?) with a few fine calcareous deposits, and distinct descemetitis. The iris was normal. Diagnosis: Old uveitis with recurrence.

Case 5.—Mr. R. E. C., aged 38, has been under treatment since May 20, 1902. There was dimness of vision for three weeks before he came under treatment. At first there was pain, but this had disappeared. There was extensive descemetitis covering the entire cornea. The pupil dilates without any synechiæ. There is sensitiveness to pressure in the upper inner portion over the ciliary body. No ophthalmoscopic reflex. Fingers are seen at four feet. He denies lues; the urine is normal. In this case the descemetitis is of a peculiar form. Besides the many coarse and fine opacities usually seen, there are deposits arranged somewhat in the form of a circle around the central part. These deposits are very large and irregular and are confluent. (See Fig. 2.) It is probable that there is extensive uveitis, but the opacity at present prevents examination of the fundus.

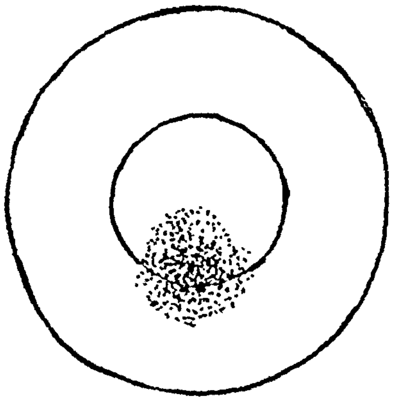

Fig. 1.—Case 3.

B. DESCEMETITIS WITH CYCLITIS.

Case 6.—Mrs. B., aged 31, was seen Dec. 22, 1897, complaining of a mist before the left eye for several days. The pupil dilated ad maximum under a mydriatic; the vitreous was clear, the fundus normal, but there was extensive descemetitis. Under iodid of potash the condition gradually improved, and in the following May the cornea was almost clear. In September, 1898, a few small permanent opacities resulting from the descemetitis were found. But in October she returned with descemetitis in both eyes and distinct synechiæ. At no time was there any pain. Iodid of potash was again ordered and atropia used and the condition rapidly improved.

Case 7.—Mr. C., aged 49, was seen June 19, 1900. Six months previously he had had severe iritis in the right eye and an iridectomy had been done. He now complains of pain in the left eye. There are no synechiæ, but a coarse descemetitis covers the lower half of the cornea. There is no note of the fundus and the patient was not seen again.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

[1] Vol. xxv, 1896, p. 191.

In the last case but one (Case 6) we found descemetitis in the left eye without other evidence, at the time, of uveitis: ten months later there was recurrence in both eyes with distinct though slight iritis. There is little doubt but that the chief trouble here was cyclitis with slight involvement of the iris during the second attack. In Case 7 the patient had recently passed through a severe iritis in one eye before the other eye became affected with the descemetitis but without synechiæ. The diagnosis of cyclitis is most probably correct.

Case 8.—Mr. G., aged 28, applied for treatment Jan. 8, 1891; he had had great pain in the left eye for one week. The examination showed that the pupil was responsive to light; there were no synechiæ. The color of the iris was somewhat darker than in the other eye; a few blood vessels could be seen on its surface. The circumcorneal congestion was marked, but the ciliary sensitiveness was not great. The cornea was studded with the finest deposits on Descemet's membrane. Atropia was instilled, and on the following day a second careful examination showed the same corneal deposits and likewise striæ in the cornea. The striæ persisted for a number of days during the intense stage of the inflammation; toward the end of January the cornea became clearer, the congestion of the eyeball diminished. February 4 the eyeball was almost white, but the corneal deposits, though fine, were still to be found and there were likewise some fine deposits on the anterior capsule of the lens. The condition then rapidly improved; synechiæ did not develop in this case and the affection of the iris was very slight in comparison with the severity of the symptoms. The diagnosis was acute cyclitis with slight involvement of the iris.

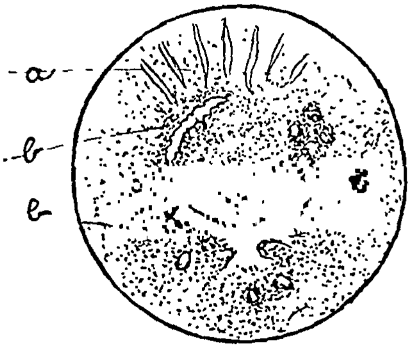

Fig. 2—Case 5. *a*, Striate keratitis; *b*, large confluent deposits.

Case 9.—Mrs. F., a myope, was seen frequently from Aug. 7 to Oct. 7, 1897. The patient had complained for two weeks before she was first seen. The eyeball was at first congested. There was little pain. There was typical gross descemetitis, triangular in shape in the right eye. The media were too cloudy to permit of ophthalmoscopic examination. There was one small synechia. The condition gradually became clearer and finally but a few brown deposits were found on the cornea. The patient was seen two years later, the fundus found normal and the media clear. In this case there was without doubt intense cyclitis, with slight involvement of the iris.

Case 10.—George H., aged 25, was seen early in August, 1896, complaining that his eye had been cloudy for four days. There was peculiar descemetitis, almost circular, which did not reach the lower limbus (Fig. 3). There were no changes in the fundus nor in the iris. The patient was seen frequently and carefully examined. When after four weeks the corneal opacity had cleared up (leaving a little spot of permanent opacity in its center), fine dust-like opacities were found in enormous quantities in the anterior portion of the vitreous, and there was one larger opacity. Diagnosis: cyclitis.

In this case there was at no time any pain. The eyeball became but slightly congested. The extent of the descemetitis became somewhat enlarged after it was first seen, but it never lost the round shape. The presence of the vitreous opacities proves that the deeper uveal structures were involved.

Case 11.—Miss F., aged 39, with excessive myopia, choroidal atrophy and poor vision (—15 Ds. 6/60), was operated on the left eye in October, 1900, for the relief of the myopia. Discission was performed twice and in December the lens substance was removed through a linear incision. Her vision improved so much that in October, 1901, she came for operation on the right eye. In this eye the removal of the clear lens, without iridectomy, was performed Oct. 22, 1901. Barring slight incarceration of the iris, and one synechia, there was excellent recovery, but some cortical matter was left. This rapidly absorbed and excellent vision was obtained through a central opening. On December 11 the patient was again seen. The eyeball had been somewhat congested and the cornea was studded with a number of large spots. Atropia was ordered. In two weeks the eye was much clearer and on February 14, when the patient was again seen, no fundus change could be found, the cornea and other media were clear, and vision after correcting the astigmatism was almost 6/12.

The appearance of the descemetitis in this case almost two months after the operation, when the pupil was sufficiently clear to allow of ophthalmoscopic examination, makes the diagnosis of cyclitis probable. This was without doubt due to incarceration of the iris and the presence of old iritic synechiæ.

Case 12.—Mr. T., aged 27, was seen June 24, 1893. Both eyes were very myopic. The sight of the left eye had become very much reduced (2/200), and the field was much limited. The left cornea was studded with large and fine deposits and the vitreous filled with fine and coarse opacities. The corneal opacities rapidly disappeared, but the vitreous opacities lasted for a long time. The fundus was then found normal.

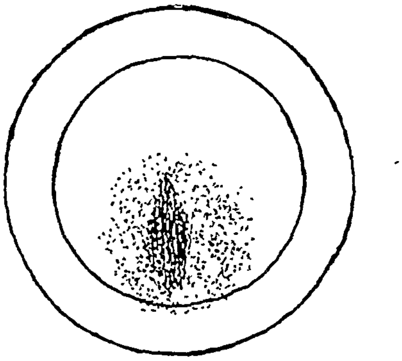

Fig. 3.—Case 10.

Case 13.—Frank R., aged 28, was seen once in January, 1894. He had been suffering with impaired vision in the right eye for two years; during the past year there had been great improvement while under the treatment of another physician. No cause could be assigned. Vision was now almost 5/7, but the cornea contained scattered deposits and the vitreous numerous opacities. The iris was normal and no fundus change could be found. There was marked asthenopia in near work.

Case 14.—Wm. B., aged 23, was seen Sept. 5, 1894. The patient had suffered from chronic rheumatism. The right eye had been struck nine years previously and was frequently painful since that time. There was great asthenopia and spasm of the accommodation. On September 13 slight hazy spots were found in the right lens and a few opacities in the vitreous. The patient was seen often and there was apparently frequent change in the refraction. Dec. 14, 1896, he appeared with numerous deposits on Descemet's membrane. February, 1897, the eye became painful, the vitreous showed many opacities and there were some fine mottled opacities in the cornea. The condition increased at first, then cleared up, and in June the cornea was again almost transparent. But at this time the right eye began as the left had in February, and went through the same changes. In March, 1898, there were extensive deposits on Descemet's membrane in both eyes as well as vitreous opacities. The condition gradually improved. No fundus changes were observed.

Case 15.—Miss M. A. B., aged 26, was seen Nov. 9, 1891. The lower half of the cornea was studded with fine descemetitis. The pupil dilated *ad maximum* under atropia and there was no evidence of iritis. Even with the dilated pupil, only a dull reflex could be obtained in all directions, but no distinct image. There were large vitreous opacities. The patient stated that the condition had been worse, but was now improving. Fingers were counted at five feet. Patient was not seen subsequently.

Case 16.—Miss D., aged 33, was first seen April 9, 1901. She complained of blurred vision in the right eye for the past three months and had long suffered from severe headaches. There was marked descemetitis, and the vitreous was filled with fine and coarse opacities. V-20/200. There was no sign of iritis, and careful examinations of the fundus (then and since) have failed to reveal anything abnormal. The visual field was perfect. She was examined for disease of the heart, kidneys and blood, with negative result. There was no evidence of lues. She was given red iodid of mercury alternating with iodid of potassium.

The patient has been seen frequently. This condition has fluctuated, but has not at any time disappeared. At the last examination on May 14, 1902, V-20/100. The right cornea is still studded with fine deposits. The lens is clear. The vitreous contains fine and coarse opacities. The fundus is normal and the field of vision for white and red is perfect. The left eye has not at any time shown any evidence of disease. Diagnosis: chronic cyclitis.

In the last series of cases there was sufficient evidence in the extensive vitreous opacities of deep uveitis, but as the fundus showed no abnormalities and the iris was unaffected, we place the lesion in the ciliary portion. The three cases that follow give still further evidence of uveitis in the development of cataract in young and otherwise healthy persons.

C. DESCEMETITIS WITH DEVELOPMENT OF CATARACT IN YOUNG PERSONS.

Case 17.—Mrs. N., aged 32, was first seen Jan. 23, 1898. She complained of having had "spots before her sight" for some time, and that in the past few weeks the condition had become much worse. In the right eye there were numerous dust-like, vitreous opacities, and the lens likewise contained similar opacities. The optic disc and retina appeared normal. In the left eye there was rapidly developing cataract, and the fundus could not be examined. Both corneæ were studded with fine and coarse deposits. Close examination did not reveal any choroidal lesions even in the periphery. Vision in the right eye was 6/8, 6/6 partly with plus 1.5 Ds; the left eye distinguished fingers at four feet. The field of vision of both eyes (for white and colors), was approximately normal. The patient was carefully examined and was found healthy in every respect (heart, blood and urine). She was given iodid of potash in small doses, and later the red iodid of mercury. In March of the same year the vitreous of the right eye had become clearer, but there was still descemetitis in both eyes. The cataract of the left eye had increased. The descemetitis was discerned as late as April. In August I could find no deposits on the corneæ and the right vitreous was almost perfectly clear. The opacities in the right lens had not made any advance. There was at no time pain or other active signs of inflammation. The patient left the city and was not seen until December, 1899. The cataract in the left eye in the meantime became sufficiently mature to permit of an operation, which was performed Jan. 1, 1900. A small iridectomy was made and an excellent result was obtained. The patient was last seen in April, 1902. The vision of the left eye is perfect and a careful examination of the fundus failed to reveal any changes. The condition of the right eye is practically unchanged.

Case 18.—Miss F. D., aged 10, an apparently healthy and well-developed girl, was first seen Feb. 3, 1898. She had complained for a few days of blurred vision in the right eye. The right vitreous was filled with fine opacities. There was marked descemetitis. No choroidal lesion could be found. The left eye was perfectly normal. Vision was almost perfect. Toward the end of the month the cornea became clearer. The patient was seen frequently and on March 14, I observed a number of small opacities near the posterior surface of the lens. They gave the picture of minute bubbles. Vision remained about the same and the field of vision was perfect. The corneal opacities were observed from time to time as late as November, 1899, but in April, 1900, the cornea was perfectly clear. In the meantime the lenticular opacities had gradually increased and formed a more or less circumscribed cataract in the outer, upper portion of the posterior cortical layer. In October, 1901, there was a recurrence of marked descemetitis and the opacity of the lens had increased somewhat. She was last examined in November, 1901, and numerous deposits were still found on Descemet's membrane. The opacity of the lens had not increased and her vision is still good.

Case 19.—Mrs. G., aged 27, was seen on May 1, 1902. She had been forced for the past few years to sew to an excessive amount and had found that the sight of the left eye had been failing. She was otherwise in good health, but had lost in weight, which was due, as she thought, to overwork and worry. The right eye was found to be perfectly normal (plus 1.75 V-6/5); left eye showed extensive descemetitis and opacities in the form of small globules throughout the posterior portion of the lens. The vitreous could not be examined, but a sufficiently clear picture of the fundus was obtained to determine that the optic disc was normal and that there were a few small, pale, pink and sharply circumscribed spots in the periphery of the choroid. The field of vision was slightly contracted.

The development of the cataract in these cases is the expression of marked nutritive disturbance and can only be ascribed to uveitis, for general constitutional disease was definitely excluded. On the other hand, there were in all the cases abundant opacities of the vitreous which likewise indicated uveitis.

D. DESCEMETITIS ASSOCIATED WITH GLAUCOMA.

Case 20.—W. T., aged 42, was seen July 24, 1900. There was a deep glaucomatous excavation with atrophy of both papillæ. The left fundus appeared blurred because of enormous vitreous opacities and gross descemetitis arranged in triangular form. Vision, right eye, 10/200, left eye, perception of light eccentric.

Case 21.—Mrs. F., aged 28, was seen April 10, 1902. Seven years before she had had trouble with the left eye, at first in the form of spots and after a time vision was entirely lost. The eye was never painful. She now suffered slight discomfort. T. plus ½ or 1. The pupil was not dilated. The cornea was studded with large deposits in the lower half, but the entire surface contained finer deposits. V=0. In order to exclude any malignant growth by ophthalmoscopic examination, a mydriatic was used in spite of the high tension. There was a cataractous opacity in the central posterior portion, but with the dilated pupil a dim image of the disc was seen. By parallactic movements the excavation was distinctly made out. No other fundus changes could be made out, but there were abundant vitreous opacities. The right eye was perfectly normal.

In the last two cases the evidence of uveitis are vitreous opacities, glaucoma and in the one cataract. The ophthalmoscopic image was not sufficiently distinct to exclude choroiditis with certainty.

E. DECEMETITIS WITH ACUTE CIRCUMSCRIBED EXUDATIVE CHOROIDITIS.

I have next to report that descemetitis was observed in 31 cases of fresh exudative choroiditis. These cases will not be detailed individually on this occasion. I shall reserve their publication for a separate paper, partly because it would require too much time, but especially because I am desirous of calling attention to many other points of interest in these cases besides descemetitis. This disease, which is observed between the ages of 17 and 50, the average age being 27¼, is characterized by the appearance of white or bluish white circumscribed effusions near the optic disc or the macula, but very frequently in the extreme periphery of the fundus. The size of the effusion may be less than that of the disc or it may be six or eight times as large. The symptoms so far as vision is concerned consist most frequently in the appearance of muscæ with a blurring of central vision, which may be slight or marked, and result in complete loss of central vision when the effusion is in the foveal region. There is rarely any pain. I have examined in all 38 cases of this affection which were more or less recent and, as above stated, 31 showed descemetitis. In four, the patient was seen too late and the deposits had probably disappeared. In one the pupil was too small to make a careful examination, and in only two was there no explanation for their absence. Vitreous opacities were never absent. In many of these cases the corneal deposits disappeared within a few weeks, but the vitreous opacities lasted for a long time. The effusion gradually disappears and leaves an area of atrophy and irregular pigmentation. The disease shows marked tendency to recurrence.

I should like to say a word here as to how these effusions are to be found; the examination of the field of vision is an excellent guide, and has helped me in a number of cases. But I rely chiefly upon watching the ophthalmoscopic reflex in different portions of the fundus and examining with the indirect image whenever a whitish reflex appears.

F. DESCEMETITIS IN SYPHILITIC CHOROIDITIS.

Case 22.—Mr. H. was seen March 4, 1902. The patient had had luetic infection nineteen months before, followed by mucous patches, but without any skin eruption. An iritis in the left eye soon followed. This was rapidly cured. Eight months ago he noticed a scintillation before the left eye and vision dropped slightly. This scintillation has continued ever since and is very annoying. He does not complain of his right eye. In the left eye there are dense vitreous opacities, but the papilla can be made out with a little difficulty; the cornea is studded with descemetitis; there are numerous brown spots on the lens, traces of old iritis. The upper lid droops slightly. In the right eye the fundus appears normal, there are some vitreous opacities and fine descemetitis. Vision of the left eye scarcely 3/45. In the right 6/18. The patient was put on mercurial inunctions and jaborandi. He was last seen May 1. Vision had improved; right eye, 6/15, —0.75 Ds 6/9 almost; left eye 6/30, —0.5 Ds 6/15 partly. The fundus had cleared sufficiently to show a few light pinkish choroidal spots, typical of syphilitic choroiditis.

In this connection I desire to state that in another case under observation at the same time, in which but one eye was involved and the condition never became as bad as in that just described, no corneal deposits were observed.

I wish next to refer briefly to a few cases in which the chief disease appeared to be extra- and not intraocular. At the beginning of this paper I referred to diffuse keratitis. I have observed descemetitis twice in cases of circumscribed keratitis.

G. DESCEMETITIS ASSOCIATED WITH CIRCUMSCRIBED INTERSTITIAL KERATITIS.

Case 23.—Mr. O., aged 25, was seen in April, 1896. There was circumscribed keratitis which at first appeared to be incipient diffuse keratitis, but which did not take this course. There was marked descemetitis. There are no notes as to the fundus.

Case 24.—Mr. E., aged about 30, who was first seen Feb. 15, 1902, complaining of the left eye. He ascribed his trouble to having had a little hot wax fly into the eye, after which the eye had remained red for some time. There was no constitutional disease and lues was denied. When first seen there was slight injection of the eyeball just below the cornea, a small area of sclerotizing keratitis, fine descemetitis and the fundus was normal. He was seen again March 21, the fundus was normal and there were no signs of iritis; a few fine blood vessels had penetrated into the sclerotizing region, and there was still descemetitis. The patient had been seen in consultation with his family physician, who reported on May 1 that the eye had become perfectly normal.

H. DESCEMETITIS ASSOCIATED WITH SCLERITIS.

A second extra-ocular condition with which I have found descemetitis associated is scleritis.

Case 25.—Thomas K., aged 27, had lues for two months, when he was attacked with severe scleritis. The fundus was perfectly normal. A week later there was fine descemetitis with numerous larger deposits. Two weeks after this the scleritis had disappeared (under specific treatment) and the cornea was much clearer.

Case 26.—Mrs. B., aged about 35, had double retrobulbar optic neuritis in April, 1896, from which she recovered with very good vision. In January, 1899, she returned with inflammation of both eyes, which had made its appearance almost immediately after having exposed herself to the cold while menstruating (without any additional covering she hung out her wash on a very cold day). There was well-marked scleritis in both eyes. I left the city soon afterward and did not see her again till June, 1901. She had had the scleritis for a long time, but was now free. At this time there was marked descemetitis, especially in the right eye, without fundus changes.

In neither of the two cases just cited is there any note of uveitis. Scleritis frequently results in uveal involvement, and I am inclined to believe that there was secondary involvement of uveal tract in both of these cases. I have found iritis and old synechiæ in several of my cases of scleritis.

CONDITIONS IN WHICH DESCEMETITIS IS ABSENT.

I have not found descemetitis in any cases of disseminated choroiditis, central choroiditis, senile choroiditis, myopic choroiditis, and, as mentioned above, it was absent in one case of syphilitic choroiditis in which it was carefully looked for, and in several others in my case books. It is absent in hemorrhages of the retina, choroid or vitreous, and I have never seen it in any case of retinitis excepting in syphilitic retinitis (but in this case there was also iritis).

SUMMARY.

Keratitis punctata interna, or descemetitis, is observed in various ocular diseases. It is found in every case of iritis. It is an almost constant sign of exudative choroiditis and is sometimes found in syphilitic choroiditis. It is also observed in cases of acute and of chronic cyclitis. It is found in diffuse and in circumscribed keratitis, in which cases it probably depends upon an underlying uveitis. It is sometimes seen in scleritis; and is then probably due to associated, perhaps secondary, uveitis. When no other signs of uveal disease are noted besides descemetitis, as in the first three cases of our series, it is due to carelessness in the examination.

Excluding the cases of external disease (diffuse and circumscribed keratitis and scleritis) and the great category of iritis, I have been able to report on 53 cases. Even including those earlier ones in which the examinations were not made with the thoroughness of those of later years and including those in which the opacities of the media prevented examination of the fundus, they show that about three-fifths have exudative choroiditis. This ratio is indeed high; I ascribe it to the fact that, convinced for a number of years of the frequency of these cases, I have examined the fundus in many cases for a long time and repeatedly until I found the looked-for lesion. In some the diagnosis was not made until the second visit and after a mydriatic had been used, and in several of those seen in dispensary practice the lesion was not observed by any of those who examined the cases until it had been pointed out to them. Experience has taught me that a large number of these cases pass through the hands of skilled ophthalmologists without discovery of the true lesion. I do not hesitate to say that if my earlier cases had been examined more carefully exudative choroiditis would have appeared relatively still more frequent than has been shown in this paper. It is due to ignorance of these facts and to carelessness in examination that so many cases are still recorded as "serous iritis" and "serous cyclitis." It should be noted that we can examine with the ophthalmoscope only that part of the choroid lying back of the equator, and, at most, with a dilated pupil the equatorial region or a little beyond it.[2] Exudations in the anterior portion of the choroid may therefore be beyond the reach of the ophthalmoscopic examination. Such cases will be grouped with cyclitis.

Do the cases reported throw any light on the nature of the cyclitis with which descemetitis is associated? We know that descemetitis occurs in iritis, in which disease we always have an exudative inflammation. We find descemetitis in choroiditis only when there is exudative inflammation. It is but reasonable to infer on clinical grounds that descemetitis occurs in cyclitis only when there is exudative inflammation. The "serous iritis" and "serous cyclitis" have, therefore, no clinical bases. That they have no pathological basis has been pointed out recently by Bruns.[3] It is to be hoped that these terms will be discarded in the future, and our section would do well to express itself with decision to this effect. One point that I should especially like to impress by my paper is, that in a large proportion of cases ordinarily diagnosed as "serous iritis" and "serous cyclitis" we find exudative choroiditis.

INJURIES OF THE EYE PRODUCTIVE OF DISEASES OF THE UVEAL TRACT.*

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The accidents to which the eye is exposed are manifold. Notwithstanding its bony environment and its soft and resilient orbital cushion, the prominent and commanding position in the head affords a conspicuous target for flying missiles, and the insufficient protection afforded by the lids and lashes and the practically uninterrupted functional application of the eye during working hours materially contribute to its dangers. The fortunate provision of nature, the endowment of man with two eyes, saves us from blindness should disaster overtake one-half of the visual anatomy, but this very duality multiplies the danger, and, more than that, uncared traumatic inflammation of the one threatens the safety of the other eye.

Apparently insignificant injuries are sometimes followed by the most disastrous results. This ocular inconsistency between cause and effect is to be traced in every instance to either delayed or unwise treatment or to the state of the constitution of the individual at the time the injury is received.

It seems to me useless to spend the time allotted to the reading of this paper, or your time in listening to it, by consideration of the kinds of injuries, such as incisions, punctured wounds, concussion, foreign bodies, etc., or to dwell on the well-known exceedingly complicated anatomy of the uveal tract and the diseases induced by accidents. I prefer, therefore, to confine my remarks to a brief discussion of the constitutional complications and the early and late treatment of injuries of the eye causative of disease of the uveal tract.

The object of the treatment is two-fold, namely, the preservation of useful vision and, in cases in which this result is unobtainable, the saving of the eyeball.

A favorable prognosis depends in large measure, as I have intimated, on a constitution free from inherited or acquired taint and uncorrupted by devitalizing habits.

I wish to direct your attention to the pernicious influence on the course and termination of traumatic inflammation of syphilis, diabetes and tuberculosis. Any one of these affections will render the prognosis uncertain if not actually bad by intensifying the inflammation or changing its character, or developing a tendency to involve adjacent or remote organs.

SYPHILIS.

In *syphilitic patients injuries* to the eye are accompanied by exudation from the iris, ciliary body and choroid that destroys the transparency of the media and tends to alter the normal relation between secretion and excretion, and leads eventually to secondary degeneration. From the iris the exudation is poured into the anterior and posterior chamber and into the tissue of the iris, and from the posterior portion of the uveal tract into the vitreous. The iris becomes adherent on its posterior surface and pupillary border to the lens and the pupil occluded. Precautionary iridectomy is followed by further exudation and by closure of the coloboma, and finally the ball is enucleated to save the pain of secondary glaucoma. In view of this common termination the inception of traumatic iridocyclitis must be energetically combated by the free exhibition of mercury and the iodids, and the earlier this treatment is instituted the more hopeful the outcome. My experience leads me to believe that the most thorough and rapid method is by mercurial inunction or calomel in small and frequently repeated doses, combined with iodid of potassium in rapidly increasing amounts. Salivation and iodism are postponed and the influence of the remedies increased by the simultaneous institution of the sweat treatment by pilocarpin, hot baths and the usual adjuncts. Locally, the frequent use of strong solutions of atropia. hot compresses, leeches and blisters is indicated. The subconjunctival injections of large quantities of weak solutions of mercury bichlorid are reported to have been useful in checking inflammation and preventing suppuration. Their good offices I have witnessed in one striking case. A non-syphilitic boy of 3 was badly wounded by a rusty iron hinge. The cornea was torn through, the iris and probably the lens were prolapsed, and after a few days the ocular contents showed every indication of becoming purulent. Repeated injections of mercuric bichlorid, 1-10,000, under the conjunctiva saved the ball and made an iridectomy possible.

The general and constitutional symptoms of syphilis are in most cases sufficiently pronounced to enable one to determine the presence of this dyscrasia. For example, in the inherited form we have the facies syphilitica, the scarred mouth, the Hutchinson teeth, the enlarged glands or the scars of ulcerated and broken-down glands; in the acquired form, the history, the cutaneous stains, iritic synechiæ, chorio-retinitis, point unmistakably to the affection. When, however, there are no indications to be seen or learned, and when one must judge by the course of the inflammation following the injury for which the patient has come under treatment, one is guided by the amount of exudation disproportionate to the degree of inflammation, the nocturnal rather than the diurnal pain and its chronic course. I have not been able to determine that the danger of sympathetic inflammation is any greater in syphilitics than in non-syphilitics. It must be borne in mind in dealing with these cases in which iridocyclitis attacks the uninjured eye that it may be a manifestation of syphilis, developed, perhaps, in consequence of the injury and subsequent inflammation of the other eye for the same occult reason that acute glaucoma is lighted up in one eye after iridectomy on the other for glaucoma. Such accidents can not be attributed to sympathy, or, at least, to the affection of the second eye following traumatisms where the origin of that affection is derived undoubtedly from the traumatism and known as sympathetic ophthalmia. I feel very sure that some of the cases reported as sympathetic ophthalmia. and particularly those appearing weeks or months or years after enucleation are local manifestations in the hitherto sound eye of constitutional affections, with especial reference to syphilis.

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[2] Hirschberg, Centralbl. f. Augenheilk., 1891, p. 324.

[3] Archives of Ophthalmology, 1901, p. 569.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

DIABETES.

Injuries to the eyes of diabetics are almost invariably the cause of serious damage to, if not of the loss of, the eye. The truth of this statement can be abundantly verified. Those of us who have been careless in examining into the bodily condition before extracting a cataractous lens, or who have had the operation forced upon us, will agree they have had more failures than successes. The tendency of diabetics to gangrene is not more marked in any other portion of the body than in the eye, but fortunately the tendency becomes manifest only after injury. The uveal tract and the tissues that are dependent upon it for their health and growth give early indication of the blood impoverished by diabetes. Iritis, cataract, vitreous opacities and degeneration of choroid and retina in patches are common ocular complications of diabetes, and each of them is evidence of the disturbed nutrition. Now when an injury is the exciting cause of inflammation, the pre-existing tendency to involvement in the general affection will lead to results that are disastrous and entirely unwarranted by the character of the injury. For example, I have recently had under treatment a man who received on the cornea an apparently insignificant injury from impact of a small foreign body. The body was removed. The floor and edges of the wound became infiltrated with pus. In spite of the most active treatment, both for the abscess and the diabetes, the entire cornea was destroyed, exposing the iris and permitting of the escape of the lens and vitreous, necessitating finally enucleation. In another case preliminary iridectomy and massage of the lens for ripening of a cataract was followed by numerous hemorrhages into the anterior chamber, chronic iridocyclitis and loss of the eye.

We learn from these and similar cases: 1, the necessity for the examination of the urine for sugar preparatory to the operation for the extraction of cataract; 2, the obligation to consider all cases of injury serious until they are proven slight; 3, the necessity for strict remedial and dietetic measures in diabetes mellitus, and 4, in spite of treatment an unfavorable prognosis.

TUBERCULOSIS.

In individuals with a predisposition to tubercle, injuries to the eye, and particularly the penetration through the coats of cutting instruments or of foreign bodies, may give rise to local tuberculosis. This is brought about by one of two influences, namely, either the entrance with the foreign body of the tubercle bacillus or the stimulation to activity of bacilli pre-existing in a latent form at the site of the injury. The uveal tract and the contents of the vitreous and aqueous chamber furnish fertile soil for the multiplication of bacteria. Their growth is rapid, and equally rapid is the destruction of the function of the ball. The eye is destroyed by chronic iridocyclitis that is not amenable to treatment. As soon as the diagnosis is established by inoculation of part of the contents of the eye into the eye of one of the lower animals the ball should be enucleated. This is imperative. Delay will mean that the infection will become general and end in the death of the patient. We must expect similar processes of inflammation and disease to follow traumatism to the eye that are familiar in other parts of the body after injuries. Scrofula, which, in the opinion of some writers, is an hereditary form of diluted tuberculosis, is a predisposing cause to tardy healing of wounds, and should not be overlooked in the examination to determine the constitutional reason for chronic forms of inflammation after traumatism.

Early enucleation of a badly injured eye saves the patient and the surgeon annoyance and time, and has become, I think, a fashion. The patient's confidence in his physician must not be betrayed, and the most convincing argument in favor of enucleation, namely, the fear of sympathetic inflammation, should not be abused. One must be convinced beyond the shadow of a doubt that vision is irretrievably ruined before resorting to extreme measures. Nature's recuperative powers combined with human knowledge and antiseptic remedies accomplish wonderful cures. And sympathetic inflammation is not always as black as it is painted. It never follows immediately after the injury, it always gives warning and it may never come. I except from these rules eyes that contain a foreign body that can not be extracted. In the cases of foreign body in which the ciliary region is the site of the injury, or likely to become irritated by the presence of the body in the eye, immediate enucleation is the only safe treatment. The presence of a foreign body is indicated by chronic or recurrent intractable inflammation of the uveal tract. Sympathetic inflammation will supervene in three weeks or later, and can be prevented only by the extraction of the foreign substance or removal of the eye. There ought to be no uncertainty in the diagnosis, for unless the foreign substance is extremely small the *x*-rays will determine beyond reasonable doubt its presence. In all other classes of injury unless the traumatism is unusually destructive the expectant plan of treatment should be adopted and enucleation reserved as the last resort.

CONCLUSIONS.

1. Injuries to the ciliary zone are always serious and often destructive of the usefulness of the eye.
2. The syphilitic, diabetic or tubercular diathesis delays recovery and renders the prognosis uncertain.
3. Diseases of the uveal tract the result of injuries are favorably modified b[illegible]he energetic treatment of stitutional affe

4. Enucleation or one of its substitute operations is to be practiced immediately when a foreign body lies embedded in the ciliary region and can not be extracted, or when an eye is mangled beyond hope of redemption.

5. Conservative measures, such as cold compresses, antiseptic washes, subconjunctival injections, excision of prolapsed iris or ciliary body, rest in bed, restricted diet, morphia and other means to subdue inflammation should be the rule in other cases.

(The symposium on uveitis will be concluded next week by the papers of Drs. Wilder, Woodruff and Marple and the discussion.)

THE EMPLOYMENT OF DIGITALIS AND ACONITE IN THE TREATMENT OF CARDIAC DISEASE.*

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Among all the difficulties which have beset the subject of the proper use of drugs in disease, and there have been many, as we all know, it can not be doubted that the factor of greatest importance has been the employment of remedies by physicians without their having a correct conception, and sometimes no conception at all, of the pathological process underlying the condition which is to be relieved. This depends on the fact that many practitioners lack preliminary training, not only in morbid anatomy and morbid physiology or pathology, but also fail to study the possible effect of well-known drugs in abnormal states. The employment of certain remedies in disease has cast discredit on therapeutics by their abuse, while many physicians who have carefully studied diseased organs become so saturated, so to speak, with the seriousness of the lesions which they find that they scoff at the thought that drugs can be of service, forgetting that the vital factors are eliminated at the autopsy and that the conditions present represent a state so grave that death has taken place; that is, the worst possible state of affairs is seen. I have made these opening remarks because I do not wish to be considered a therapeutic optimist or nihilist, and because I so often emphasize the fault of using drugs when they can not do good that I fear I may be called a therapeutic unbeliever. In no class of cases does what I have said hold true with greater force than in that of cardiac disease. Some physicians are content to diagnose valvular disease, prescribe digitalis and ignore the state of the heart muscle, the state of the blood vessels and that of the kidneys, liver, and even the dose of the drug, so long as it is within bounds not poisonous.

It has always seemed to me that it is the duty of the physician to study the condition of the heart muscle, and almost entirely exclude any suppositions as to the condition of the valves of the heart. While this may be an exaggerated way of making the statement which I wish to emphasize, it is resorted to because in the majority of instances we are apt to endeavor to decide which segment is diseased without a correspondingly careful study of the condition of the ventricular wall.

Again, it is by no means an uncommon practice of physicians, after determining more or less carefully the condition of the heart, to fail to make a careful study of arterial tension, pulse force, and equally important, to attempt to discover whether there is arteriocapillary fibrosis. On the condition of the heart muscle, and on the development of arteriocapillary fibrosis much more depends in the diagnosis, prognosis and treatment of a case of so-called cardiac disease than is usually thought. It is also not permissible to reach correct conclusions in regard to these important factors in the case unless at the same time the renal condition is adequately investigated. And, again, it is not sufficient in many of these cases to be content with one or two examinations of the urine, which may fail to reveal albumin, unless at the same time estimations of urea are also made, and a careful record of the quantity of urine and of its specific gravity is kept. Not only do these renal conditions aid us in getting information concerning the probable condition of the heart muscle and of the blood vessel, but they also give us an insight into the ability of the kidneys to eliminate poisonous materials, and the drugs themselves, both of which, if retained to an abnormal degree, produce results which are disadvantageous.

I have within the last few years devoted a great deal of attention, not only to these factors in these cases, but also to the question of the proper administration of the various cardiac stimulants. and equally important, as to the dose which each individual patient needs from day to day.

Digitalis, like iron, has proved itself so valuable, doing good in so many instances which seemed grave, that we are wont to forget that, like most things which do good, it can also do harm, and judging from my previous habit. and from the habit of other practitioners, I am convinced that in the great majority of instances digitalis is administered in doses which are much too large, and often continued over a period which is far too long. It is by no means an uncommon thing to find physicians administering as much as 10 or even 20 m. of tincture of digitalis three or four times a day in cases of marked rupture of compensation. There can be no doubt that in some cases such doses are necessary at the beginning of the treatment to meet the crisis which exists, and in much the same way that we are wont to give large doses of mercury in early syphilis, afterward cutting the doses down one-half. so it may be necessary at times to give massive doses of digitalis, which, after a period, should be rapidly and considerably diminished. I have been surprised to find what excellent results I could produce by the use of such small amounts as one or two minims of an active, physiologically tested tincture of digitalis given three or four times a day, the patient being, of course, required to rest and so give his heart that most needed therapeutic aid when its compensation is ruptured.

Apropos of this, I may add that in my belief we often fail to get results from doses and from drugs on which we rely, more because we are careless as to the physiological activity of one product than because we have made an error in judgment as to the remedy which is needed or the dose which is required. With the important subject of the employment of drugs closely related to digitalis in the treatment of various cardiac conditions there is not space to deal in this paper. In deciding what cardiac stimulant is required in a given case we must not only consider the condition of the valves and the myocardium as already indicated, but we must, if possible, reach some conclusion in regard to the state of the coronary arteries. Digitalis, which improves the nutrition of the heart, largely by improving the circulation in these arteries, can manifestly do more harm than good if these nutritive vessels are so nearly closed that it is impossible for the heart to pump blood through them in increased quantity; and again, if the myocardium has undergone such advanced degeneration that it is impossible for the digitalis to improve the nutrition of the heart, although at the same time it may be driving the remaining healthy fibers to an endeavor far in excess of their ability.

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I am also quite sure that in a certain number of cases of valvular disease the patient does not require digitalis or any other cardiac stimulant for the relief of his cardiac symptoms; but, on the other hand, in addition to rest, will often be greatly benefited by the administration of aconite, which has a steadying effect on the heart through its influence on the vagi as has digitalis. By its sedative influence on the heart muscle in hypertrophy, which sometimes produces an excessive irregularity, and by its relaxing effect on the blood vessels, it produces good results. It is much easier for us to conclude, in the case of valvular disease, with dyspnea and disturbed heart action, that these symptoms are due to a failing heart than that they are due to a hypertrophy and an excessive activity. Such cases I have frequently seen in men who are well developed, in the muscular sense, and whose occupation has caused them to do heavy manual work or who take part actively in some of the severe athletic games. And not infrequently have I seen other cases in which the use of well-balanced doses of aconite and digitalis have produced results which neither drug could produce by itself, although at first glance they are physiological antagonists.

Finally, the utter uselessness of expecting good results from either of these drugs in the treatment of certain cases of myocardiac disease which persistently take severe exercise "for their health" needs to be emphasized. I have repeatedly seen cases of men of advanced years with somewhat fibrous vessels who have mistaken the heaviness of advancing years for the heaviness of lack of exercise, and who on the golf field, on the bicycle, or by rowing or walking, have tried to drive away the symptoms from which they suffer, with a result that sooner or later the condition from which they are suffering becomes greatly aggravated and they become more or less invalids if they are so fortunate as to escape sudden or nearly immediate death from their ill-judged efforts. It seems to me, too, that when we are attempting to treat such cases, and are endeavoring to administer doses and remedies as accurately as possible, we should insist on a quiet and careful mode of life until we are able to determine that the remedies suit the case. Otherwise the change of exercise or change in diet may not only prevent the remedies from doing good, but also warp our judgment as to the plan of treatment, and so prevent us from instituting it in another case, when in reality had proper precautions of this kind been taken we would have increased confidence and been able to do much more good to a large class of patients. It is not to be forgotten that every one in this room sooner or later, according to his years, his inheritance and his mode of life, develops more or less arteriocapillary fibrosis, degeneration of his myocardium and sclerotic changes in his kidneys.

I may close by saying that curiously enough a very large proportion of the patients to whom I have just referred are physicians who, after a long life of intense nervous strain, not infrequently find themselves at a comparatively early age suffering from disorders of the heart the true nature of which they fail to recognize, either because on examining this organ they fail to discover murmurs, or because they do not appreciate the fact that a physician's life is peculiarly apt, as is that of the banker and large business manager, to develop degenerative cardiac changes. The employment of strychnin, belladonna and other drugs in connection with digitalis and aconite might be considered if time permitted, but they are not included in the title of this paper and therefore can not be discussed.

DISCUSSION.

Dr. H. B. Favill, Chicago—The paper of Dr. Hare deserves very thoughtful attention, inasmuch as it bears on one of the most perplexing of therapeutic puzzles. How to avail ourselves of the valuable powers of digitalis, at the same time escaping its disadvantages, has been a great problem and becomes steadily a greater problem as these disadvantages become more obvious. In general, this is a parallel procedure to that of combining digitalis and nitroglycerin, though there are decided differences in the deeper physiologic activities. The latter combination is by no means uniformly satisfactory, and there is no doubt that the suggestion of Dr. Hare is important as an additional resource under these indications. I shall make it a point to employ this combination under appropriate conditions.

Dr. Allen A. Jones, Buffalo—I agree with what has been said regarding the danger of digitalis in large doses when there is myocardial disease, especially when due to disease of the coronary arteries. In a case recently observed, a man of some age took 10 minim doses of digitalis every four hours. When I saw him he was almost in collapse. The pulse was extremely slow and the heart had apparently stopped beating. He certainly was in bad shape. Under the use of nitroglycerin and strychnin, absolute rest and proper management, the man recovered. I warned him against the danger of using digitalis in that way.

Dr. J. M. Anders, Philadelphia—I was much impressed with the sound advice given by Dr. Hare and am quite of the same opinion regarding the giving of too large doses of digitalis, and the too long-continued use of this drug. Allusion was made to the combined use of digitalis and aconite in certain conditions; while the Doctor did not consider the other remedies often combined with digitalis it seems to me that a brief allusion should be made to nitroglycerin, which should guard the action of digitalis, more particularly in hardening of the vessels. Nitroglycerin is of service where the myocardium is the seat of fatty or fibroid change and the blood vessels sclerotic. This drug does not weaken the action of the heart. On the contrary, in small doses it is a cardiac stimulant and a combination of nitroglycerin with digitalis acts well in certain cases as a stimulant to the heart, while at the same time it widens the blood paths. I have had no experience with the combined use of aconite and digitalis.

Dr. Hare, in closing—Of course, it goes without saying that I am in accord with what Dr. Anders has stated with regard to nitroglycerin and digitalis. Digitalis should rarely be prescribed unless a careful study of the pulse tension is made, for we know that digitalis will increase the pulse tension. Regarding the study of digitalis, I instruct my students how to give this drug to a patient whose heart is failing, by the following simile: If you see an old man staggering under the weight of a bundle of fagots there are two ways to relieve him: first, give him a drink of whisky, which will increase his endeavor; second, or better still, remove some of the fagots. So with digitalis in cardiac diseases. If you give digitalis without nitroglycerin to guard against the increased rise of pressure, you stimulate the heart without removing its burden; if you combine the nitroglycerin with the digitalis, you both stimulate the heart and also relieve it of some of its burden.

I did not have an opportunity in my paper of calling attention to a factor in connection with the influence of digitalis which is comparatively a new one. Two or three years ago an excellent paper was published in the *American Journal of Physiology* in which it was pointed out that the heart muscle was not only nourished through the blood flowing through the coronary arteries, but also through openings of the foramina

Thebesii. The wide mouths of these various vessels open and become filled thoroughly with blood and then, by a secondary capillary circulation through these vessels, the heart muscle is supplied with fresh blood. I do not doubt that there are many cases found at autopsy with advanced degeneration of the coronary arteries showing that digitalis given alone would be useless, perhaps injurious. Then, again, such an appearance might controvert the idea that digitalis is useless, for the benefit the patient has received may be due to the influence of the drug on the heart muscle carried there through the veins of Thebesii. I feel quite convinced that the blood so carried to the heart will readily part with its oxygen and nutritive material. I have always felt that the subject of the use of digitalis was an important one because of the grave condition of patient. I am convinced that many physicians do not have a sufficient regard for the pathology of the heart, i. e., the morbid physiology of the heart. I think this is one of the faults of the medical course of to-day; students are taught to listen to diseased hearts, but little is taught them about the proper function of the organ; they are told what happens in a normal heart in its normal cycle, but not informed as to what happens to the heart when it is diseased, or if the valves are destroyed. They are not taught enough about the employment of the different stimulants on such a heart. I am convinced that physicians who understand the use of chloroform and ether, who use chloroform in some cases and ether in others, nevertheless treat every case of valvular disease of the heart with digitalis as a routine method. When administering this drug one should first study the condition of the heart muscle and its valves and arteries.

THE ORIGIN OF THE VESICULAR RESPIRATORY SOUND.*

C. F. HOOVER, M.D.

CLEVELAND, OHIO.

The origin of vesicular breathing was attributed by Laennec to friction of the inspired air in the bronchioles and its entrance to the infundibula from the bronchioles. This inflammation was sanctioned by such masters as Skoda and Wintuch and remained unquestioned, so far as I am able to learn, until Baas attempted to explain on purely acoustic grounds the improbability of any audible sound originating in tubes the size of the bronchioles from the passage of a current of air with the slow velocity which must attend the entrance of inspired air in the vesicles of the lung. Baas' article published in the Deutsche Arch. für Klin. Medicin, vol. xix. 1876, is a profoundly thoughtful and logical discussion of the subject which was well calculated to carry conviction to the mind of the reader. I was greatly impressed with the acute reasoning of the author the first time I read the article several years ago, but in the light of recent clinical experience and the attempt to confirm some of Baas' observations, I am reminded of the voluminous monograph on the habits of the camel, the contents of which emanated from the inner consciousness of the author.

Penzoldt later offered experimental evidence to sustain the logic of Baas. The experiments of Penzoldt were very simple. They consisted in inflating a calf's lung and placing it over the trachea of a man who is instructed to breathe in the ordinary way. If a stethoscope be placed on the inflated lung the observer will perceive (according to Penzoldt) the tracheal breathing transformed to the vesicular type of respiration. This is accounted for by the refraction and partial reflection of sound waves which must occur during their transmission through such heterogeneous media as are presented in the inflated lung. If a more homogeneous medium be used, such as the calf's liver (according to Penzoldt) the tracheal breathing retains its so-called bronchial character. Sahli tried the experiment as described by Penzoldt but found the respiratory murmur transmitted through the inflated lung retained its bronchial character. The only modification, according to Sahli is a diminution in intensity of the respiratory sound.

My own observations confirm those made by Sahli. In repeating this experiment it seemed to me that only a vigorous use of the imagination could transform the audible sound into a vesicular murmur or anything approximating it. Vesicular breathing and bronchial breathing have several essential differences which will not admit of the transition of the former to the latter on the acoustic grounds cited by Baas. The terms, sound and murmur, are differentiating terms which are descriptive of two phenomena. Bronchial respiration gives a clearly definite, and simple sound which can be assigned a certain pitch. Vesicular respiration gives a confused mingling of sounds which suggest a multiplicity of points of origin. The pitch is much lower and the expiratory sound is much shorter in duration than in bronchial breathing. However remote and faint bronchial breathing may be, the duration of the expiratory sound remains the same, whereas, in vesicular breathing the expiratory sound is relatively short, whatever may be its intensity or proximity.

The observations on the case I am about to report offer absolute proof of vesicular breathing having an origin different from that of bronchial breathing:

I was called one evening to see a man 82 years old who, during the same day, had developed a violent hiccough. The patient had a temperature of 101 degrees. The base of the left lung posteriorly gave a high-pitched tympanitic percussion note with increased resistance. Tactile fremitus was not increased. During inspiration were an abundance of medium and fine moist râles. The respiratory sounds over the affected area was slightly higher in pitch, but unfortunately for the completeness of my observations, the sound had not acquired a bronchial character. The hiccough presented a very striking picture, and would recur about every half-minute during a period varying from one-half to two hours, and then disappear to return after an interval of three or four hours. So, the hiccough was present about four to six hours in every day. The patient laid 14 days in this condition until death came in the form of vagus exhaustion, so there was ample opportunity to study the details of the hiccough. The hiccough occurred frequently during sleep without waking the patient. Each attack commenced with a moderately loud laryngeal sound and was followed directly by from ten to twenty violent retractions of both hypochondria at the rate of about two to a second. The hypochondria fairly flopped, so that it strongly suggested the flopping of the wings of a barnyard fowl. The spasms of the diaphragm occurred in such rapid succession that a complete evolution of the diaphragm phenomena was not discernible, though the band of retraction over the pleural sinus was plainly visible. The contraction of the diaphragm lasted so short a time, the descent of the lung was so slight, it could not be demonstrable by percussion, though on occasions it was slightly perceptible to the eye. Auscultation during the attacks revealed a loud respiratory murmur everywhere over the lungs, over the apices, as well as the bases, which though short in duration plainly gave the characteristics of vesicular breathing. The duration of the sound during the relaxation of the diaphragm sustained the same relative duration to the sound during phrenic contraction which the expiratory sound sustains to the inspiratory sound during normal respiration. Over the infiltrated lung area râles could be distinctly heard during the contraction of the diaphragm, though not with the same intensity as with forced inspiration. If the stethoscope was placed over the larynx or trachea during the spasms of the diaphragm there was no sound audible. It was perfectly clear that with the onset of each series of phrenic contractions the glottis was tightly closed. That there was movement of the air contained in the respiratory tract toward the infundibula is proven by the occurrence of râles over the pneumonic area, but this was accomplished by rarification of air in the trachea and larger bronchi.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

The observation offers absolute proof of the existence of a true vesicular respiratory sound. Whether the sound is due to the disturbance of equilibrium of the lung tissue or to motion of the contained air, or both, is not determined, and I see no possible method of differentiating between these two factors as they are both essential premises for any clinical or experimental observations which can be made. In this case laryngeal and tracheal breathing were eliminated, there was an increase of the antero-posterior diameter of the thorax with each spasm of the diaphragm. All the muscles employed in inspiration were brought violently into action. The volume of the thorax was increased with each spasm of the inspiratory muscles by rarifying the air contained in the respiratory tract, and still the typical murmur of vesicular breathing was audible.

The nearest approach to these conditions I have found was in the case of fissured sternum, reported by Sahli. But in Sahli's case tracheal breathing was not eliminated. It would be impossible to reproduce the conditions of this clinical observation by any animal experiment. I can not conceive of such violent inspiratory efforts being produced by stimulation of the phrenic nerves alone. Since making the above clinical observation I have made the following experiment: On a healthy man, have the subject close the glottis and then make a violent inspiratory effort. At the same time auscult the lungs and you will hear a faint vesicular respiratory sound during the inspiratory effort and a faint expiratory vesicular murmur as the muscles are relaxed, though the glottis remain shut. The sound heard during relaxation of the inspiratory muscles is lowered in pitch and short in duration. The two sounds are identical in their character and their relations with the normal vesicular respiratory murmur. The sounds produced in this manner by a strong man do not, however, approach the intensity of the sounds produced by the old man with the pneumonia.

REPEATED SMALL HEMORRHAGES AS A CAUSE OF SEVERE ANEMIA.*

JAMES B. HERRICK, M.D.
CHICAGO

That recovery may rapidly follow a severe acute hemorrhage is well known. Even repeated severe hemorrhages may cause no permanent deviation from health, if the intervals between hemorrhages be sufficiently long to permit regeneration of blood to take place. The body may also stand repeated small losses of blood at shorter. even daily, intervals, with little or no perceptible change in the blood or in the performance of function on the part of any organ. Repeated hemorrhages from the nose, from hemorrhoids, from uterine fibroids may thus be endured for months or for years, the tolerance of the individual to the loss of blood and his power of blood regeneration being sufficient to withstand and make up for the daily drain. But in other instances, the daily loss of small amounts of blood produces the most severe and even fatal forms of anemia. It is my purpose in this brief paper to call attention to the importance of recognizing this form of anemia; and I treat the question from the practical and clinical, rather than from the hematologic point of view. My attention has been called to this subject by having seen five patients with bleeding piles in whom there developed a most grave secondary anemia. And I am led to write on this topic because in all of these cases the cause was for a long time overlooked and because in three of them even when the nature of the anemia had been pointed out, there was a disinclination on the part of some to regard so common and so insignificant a condition as bleeding piles as the cause of an anemia so profound and so clearly threatening life.

CASE 1.—The first case I saw while acting as assistant to the late Charles Warrington Earle. After trying in vain by iron, arsenic, tonics, rest, etc., to restore color, strength and health to a previously robust man, Dr. Earle decided to operate on the bleeding hemorrhoids. The result fully justified his suspicions as to the nature of the anemia, for the man made an uninterrupted recovery within a few weeks.

CASE 2.—The second case was the wife of a physician. She presented the typical appearance, symptoms and blood findings of a severe chlorosis. For weeks she had been losing blood with every bowel movement, often several ounces at a time. Iron and other remedies were without perceptible effect. The immediate operation that I advised was deferred because of the weak condition of the patient, a slight temperature and a loudness of the hemic murmur which made the surgeon feel that there was an organic heart lesion that might account for the anemia and that contra-indicated an anesthetic. Several months later when the patient could scarcely walk across the floor without fainting, and when my second examination confirmed the previous findings of a grave secondary anemia, most urgent advice was again given as to operation. The hemorrhoids were attended to, the anemia disappeared and the patient has ever since been in perfect health.

CASE 3.—A third patient, an old man in the sixties, had an appearance suggestive of malignant growth. Yet there could be found for his profound anemia of the chlorotic type, no tumor, tuberculosis, nephritis or other cause than some hemorrhoids that had bled daily for nearly three years. He refused an operation and was lost sight of. His blood on May 18, 1901, the date of the first examination, showed 2,450,000 red corpuscles, 6000 whites (74 per cent. polymorphonuclear), no nucleated reds, hemoglobin 29 per cent. The cells were smaller than normal, volume index .72, the time of coagulation was four minutes.

CASE 4.—The fourth case which I report more in detail concerns A. K., a Bohemian of 39. His family history was negative and he himself had pursued his occupation as a butcher, annoyed by no illness up to two years before the time I first saw him, the fall of 1901. In 1899 he had articular rheumatism and was kept from work for several weeks. From this he recovered. In September, 1900, he noticed that he was passing blood at stool. The amount was often several ounces, frequently a half teacupful being passed. He grew pale, weak, dyspneic, dizzy and by May, 1901, could barely keep at work. His feet and ankles by this time were edematous. Medicines seemed to do him no good and in August, 1901, he took to his bed, which he had left only rarely since. The bowels moved once a day, a varying amount of blood being lost with nearly every movement. He was under my care for a time in the

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*Read at the meeting of the Illinois State Medical Society at Quincy, May 22, 1902.

Cook County Hospital. Here a surgeon refused to operate on him until I had improved his general condition, saying the piles could well enough wait awhile and needed only suppositories. The patient later came to the Presbyterian Hospital, and I quote from my records of the case while he was in that institution.

Examination.—Oct. 30, 1901, he was seen to be extremely pale, with a hint of a lemon-yellow in the waxy whites of the eyes. He was somewhat emaciated, listless and apathetic as are many patients in the last stages of pernicious anemia. He was extremely weak. His lungs were clear. The heart showed no change except a systolic murmur, evidently hemic. The venous hum was marked. The abdomen and genitalia showed nothing abnormal. There was a slight edema about the sacrum and the ankles. The rectum bled on digital examination, its walls were soft, there was no stricture. On straining he brought down several large hemorrhoids that dripped blood. The examination for motor or sensory disturbances was negative. The retina was negative. His urine contained no sugar, albumin or casts. He had an evening rise of temperature at times to 100°. His pulse averaged 84, his respirations 24. The blood examination made Oct. 29, 1901, was as follows: Red corpuscles, 2,184,000; white corpuscles, 4200; hemoglobin (Fleischl, 3 tests) 19 per cent.; color index 0.44; time of coagulation, three minutes.

In the stained specimen the red corpuscles showed great variations in shape and size, the greater number being undersized. The color of the corpuscles was poor and there was fairly well-marked polychromatophilia. In a careful and prolonged search one nucleated red of the megaloblastic type was seen, and five normoblasts. Of the leucocytes the polymorphonuclear neutrophiles made up 44.6 per cent., polymorphonuclear eosinophiles 3.0 per cent., small mononuclear lymphocytes 35.7 per cent., larger lymphocytes 16.4 per cent. There were 0.3 per cent. of basophiles. Many subsequent examinations were made by myself and by different members of the house staff. The results were practically the same. The hemoglobin reading was generally made by taking two or three capillary tubes of blood instead of one and dividing the total reading by 2 or 3 as the case might be, seeking in this way to lessen the possibility of error that so easily creeps in when the hemoglobin is low. In my office, later, I also controlled by the Tallqvist color test. From these many examinations I quote only some of the more pertinent findings. November 4, the specific gravity was found to be 1034 by Hammerschlag's method by two examiners. The volume index, i. e., the number of corpuscles found by the hematocrit divided by the number found by the hemocytometer, was estimated at different times and also found less than 1, varying from .66 to .86. The findings seemed typical of a severe anemia of the chlorotic or secondary type. The small size of the corpuscles, the abnormally low color index, the rapid coagulation, the scarcity of nucleated reds, those found being almost exclusively normoblasts—all this seemed to rule out the primary pernicious anemia.

The bleeding hemorrhoids were looked on as the probable cause and operation was decided on. This was deferred for several days because of a peculiar and puzzling attack that the patient had on November 6. November 4 he vomited, also fainted while in the bathroom. On the evening of November 5 his pulse rose to 128, his respiration became short and shallow, 30 to the minute, his temperature reached 100.2°. His muscles twitched and he became stupid and semi-comatose, muttering to himself, picking at the bed-clothes, having retention of urine. There was no paralysis. In twenty-four hours he gradually regained consciousness. The exact nature of this coma is not clear. It was probably some form of intoxication. Color is lent to this theory by the fact that for several days he had not only been taking good-sized doses of iron and arsenic but he had been on full diet, in reality over-eating, with resulting gastro-intestinal disturbance. This may have been the source of the toxemia that in his weakened condition produced these alarming symptoms. During this attack the leucocytes rose to 14,800.

Following this attack he was kept quiet, given food more cautiously, also iron and tonics. His condition remained about the same as before. There were daily losses of blood. Late in November, under cocain anesthesia, as a general anesthetic seemed too hazardous, Dr. A. D. Bevan injected the four large hemorrhoids with equal parts of carbolic acid, water and glycerin. Dr. Bevan admits that he was skeptical as to the hemorrhoids being the cause of the unusually severe anemia, but operated at my urgent solicitation. From that time up to April 12, 1902, when I last saw him, there had been no more bleeding. Iron has been continued, generally in the form of Blaud's pill. The abbreviated blood counts are as follows:

Dec. 5, 1901.	R. b. c. 2,784,000. Hb. 27.5 per cent.
Dec. 21, 1901.	R. b. c. 3,800,000. Hb. 37 per cent.
Jan. 3, 1902.	Hb. (Fleischl) 61 per cent. (Tallqvist) 60 per cent.
Feb. 21, 1902.	R. b. c. 3,920,000. Hb. (Fleischl) 72 per cent.
April 5, 1902.	Hb. (Fleischl) 90 per cent. (Tallqvist) 85 per cent.

For several weeks he has deemed himself to be as strong as ever, with no dyspnea, having a good appetite and digestion. He has regained the appearance as to color and weight of a healthy man. He is prevented from working by a return of the rheumatic pains in his hands and feet. The joints have shown redness and swelling. He has had an occasional temperature of 99.4° when he has been in my office.

Case 5.—A case similar in many respects to this one was in the Presbyterian Hospital at about the same time, under the care of Dr. Palmer Findley. Through Dr. Findley's kindness I was enabled to see the patient several times. There was a history of bleeding piles for several years, the bleeding having been for ten months very severe. The ordinary anemic symptoms were present in the shape of dizziness, occasional attacks of syncope, palpitation, etc., and the same blood characteristics as in the other case, the hemoglobin being at first 18 per cent. and the red blood corpuscles 1.952,000. An operation on the hemorrhoids was done and the patient continued to improve, though slowly. At the time of leaving the hospital, six weeks after admission, he had 3,016,000 red corpuscles and 36 per cent. of hemoglobin.

The practical lesson to be drawn from these cases is perfectly plain. It is that severe anemia threatening life and producing a pallor and weakness equal to that of the pernicious variety, or suggesting some hidden malignant disease, may at times be caused by repeated small hemorrhages often from a condition as easily recognized and easily remedied as hemorrhoids. This form of anemia may prove fatal; and cases of a transformation of the type into the pernicious are reported, especially by English writers; and Ehrlich inclines to the belief that the pernicious variety may have its origin in repeated hemorrhages. The careful blood examination showing the chlorotic or secondary type of anemia should give encouragement for immediate measures looking toward a checking of the hemorrhage. The hemorrhage once stopped, recovery, though it may be slow, is generally complete.

103 State Street.

An overcrowded profession would not be the burden of professional complaint if the people were taught to employ medical counsel earlier, oftener, and to retain it longer as they should, before people have to be sent to bed by illness. Twice as many physicians are needed by the people as are employed. In times when epidemics are pending or approaching the people should be put in organic and functional condition for meeting and successfully combating disease. It is now the custom to wait till the human machine is broken and prostrate before asking medical counsel and aid.—*Alienist and Neurologist.*

A NEW INSTRUMENT FOR INTESTINAL ANASTOMOSIS.*

E. M. LUNDHOLM, M.D.
SURGEON TO BETHESDA HOSPITAL
ST. PAUL, MINN.

During my sojourn in Europe in the summer of 1900 I spent a considerable portion of my time performing surgical work on the cadaver, to which I had ample opportunity. It was then that I conceived the idea of constructing an instrument to facilitate intestinal anastomosis. After my return to St. Paul I commenced experimenting in that direction, and soon produced an instrument which, after a few modifications, proved to be very satisfactory. In hope that it will be accepted as an addition to our surgical armamentarium I hereby wish to present it to the profession.

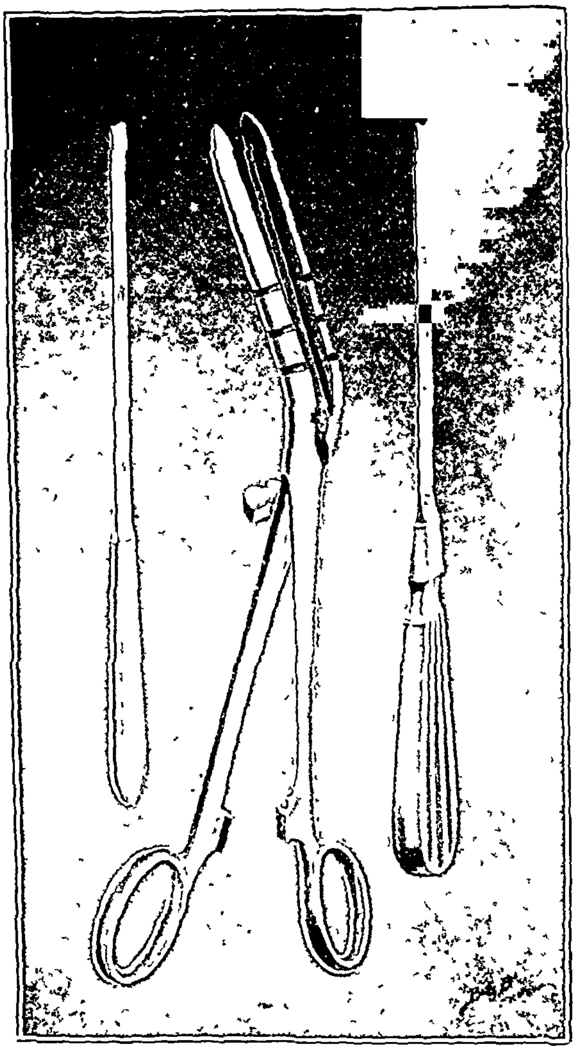

Fig 1 —Intestinal anastomosis forceps 1 Longitudinal grooves on inner surfaces of the blades, forming a rectangular tunnel closed at one end when forceps are locked 2 Transverse grooves extending around outer surfaces of both blades 3 Sharp-pointed sliding stylet, to be introduced into the tunnel formed by the grooves in order to cut the intervening visceral wall 4 Blunt sliding stylet to be heated and introduced into the tunnel after cutting is done, thereby preventing eventual hemorrhage

It appears, as we notice, similar to an ordinary clamp forceps the blades of which are dull-pointed and bent at an angle of about 125 degrees to the handles. The inner surfaces of the blades, which, by the way, are not *toothed or corrugated, but plain, have each a* deep longitudinal groove going from the angle nearly to the point of the blades. When the forceps are locked those grooves are placed opposite each other, forming a rectangular tunnel into which a narrow, sharp-pointed stylet, going with the instrument, is to be introduced at the operation. When the forceps are wide open the blades can be taken apart and put together as an ordinary hemostatic forceps. But by loosening the nut of the thumbscrew a couple of turns the blades can also be taken apart and put together when only a little open. *This is of great advantage in some operations where lack* of space does not permit the blades to be spread out sufficiently. In order to determine how far the blades are introduced both blades are graduated with three narrow transverse grooves 1 cm. apart, which also serve as fixing points for the puckering string by which the edge of the visceral opening is tied around the blades.

Gastro-enterostomy, both anterior and posterior, as well as all kinds of lateral anastomoses, is made comparatively easy and safe with this instrument. End-to-side and end-to-end anastomoses are more difficult.

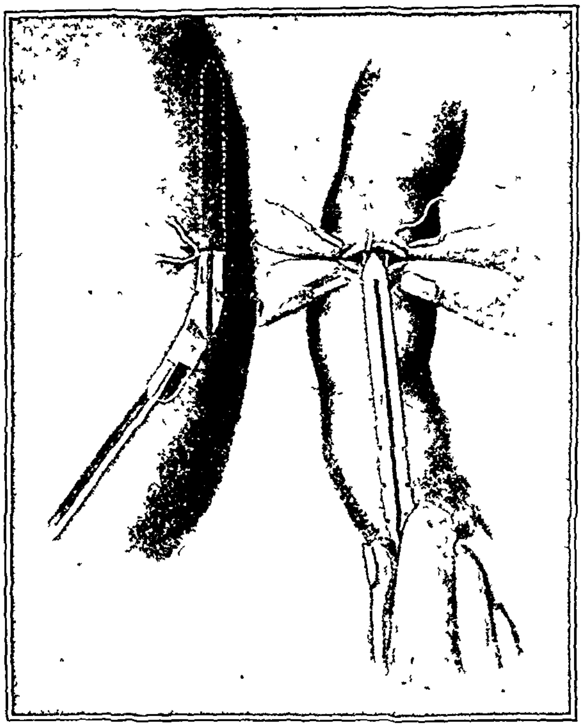

Fig 2 —Showing first steps of operation. One blade of forceps *has pierced gastric wall and is held securely* in position by tightening and tying the puckering ligatures in one of the transverse grooves This also protects from possible leakage of stomach contents The other blade, in the operator's right hand, is held ready to be pushed through into the lumen of the intestine in the *center of the pucker In order to guard against* accidental *penetration of* both intestinal walls, the anterior wall is held up steady by thumb and *index finger* of operator's left hand (to the left on the figure), and also in the same manner to the right by an assistant.

THE METHOD OF USE.

The surgical technic is simple. The abdomen having been properly opened, the bowels to be approximated are drawn into the opening and the forceps taken apart. The part of the bowel selected for anastomosis is lifted up and stretched transversely between two folds and one blade pushed into the bowel as far as desired, care being taken, of course, not to penetrate the opposite intestinal wall. The same thing is done with the other *bowel and the forceps are locked. As the blade has a* tendency to slide out again before the forceps are locked I generally first put in a puckering string around the spot where the blade is to be introduced, and after the blade is pushed in that string is tied over one of the transverse grooves. The distal end of each blade is now inside of its respective viscus, firmly pressing together the walls of the viscera to be approximated. With a continuous silk suture the adjacent surfaces of the bowels are now united, the sewing being very easy when the bowels are held stretched over the blades. The silk suture is to penetrate all the coats. Then follows a catgut suture, uniting only the serosa and possibly the submucosa. The sharp-pointed stylet is next pushed into the tunnel formed by the longitudinal grooves, whereby the intervening visceral walls are divided and the desired communication established. In gastro-enterostomy a heated, dull-pointed stylet is next introduced into this tunnel in order to prevent eventual hemorrhage after removal of the forceps. This latter procedure may not be necessary, but, as the stomach wall generally has some tendency to bleed. I have resorted to it as a safeguard. The instrument is unlocked and withdrawn and a few stitches of silk and catgut will close the remaining opening, thus completing the anastomosis. The operation is much more easily demonstrated than described.

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* Read and demonstrated before the Ramsey County Medical Society, St Paul, Minn

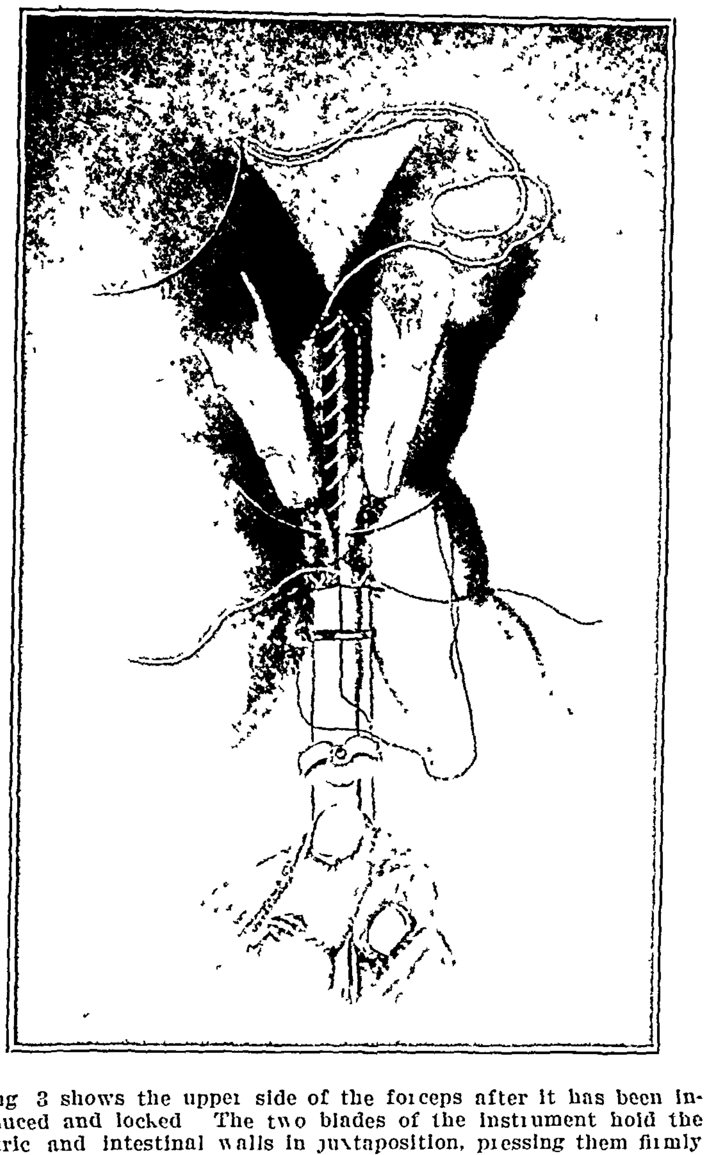

Fig 3 shows the upper side of the forceps after it has been introduced and locked The two blades of the instrument hold the gastric and intestinal walls in juxtaposition, pressing them firmly together. The original puckers are seen tied around the blades. A continuous silk suture (white) going through all the layers and also a superficial catgut (black) are sewed over the upper surface of the instrument. Note that the ends of both silk and catgut sutures are left long to be tied with the other ends of the same sutures when suturing is completed all around the anastomosis and instrument removed The forceps are held by an assistant and the fingers of the operator's left hand are holding the parts to be sutured somewhat tense over the instrument, thus very materially aiding the placing of the sutures.

OTHER SIMILAR INSTRUMENTS.

When I first had my instrument made I was satisfied that it was something entirely new, until a friend of mine directed my attention to an instrument constructed on the same principle by Dr. Ferguson of Chicago. He again claims that his instrument is a modification of a similar one devised by Dr. Grant of Louisville, Ky. A short time ago I had opportunity to see Dr. Ferguson's instrument, but I have never seen Dr. Grant's. Although my instrument differs from Dr. Ferguson's in numerous details, and I dare say is superior to his. I can, of course, not claim priority for the principle on which it is constructed. The same belongs probably to Dr. Grant. The forceps of Dr. Laplace, McLean and O'Hara as well as Murphy's button have nothing in common with this.

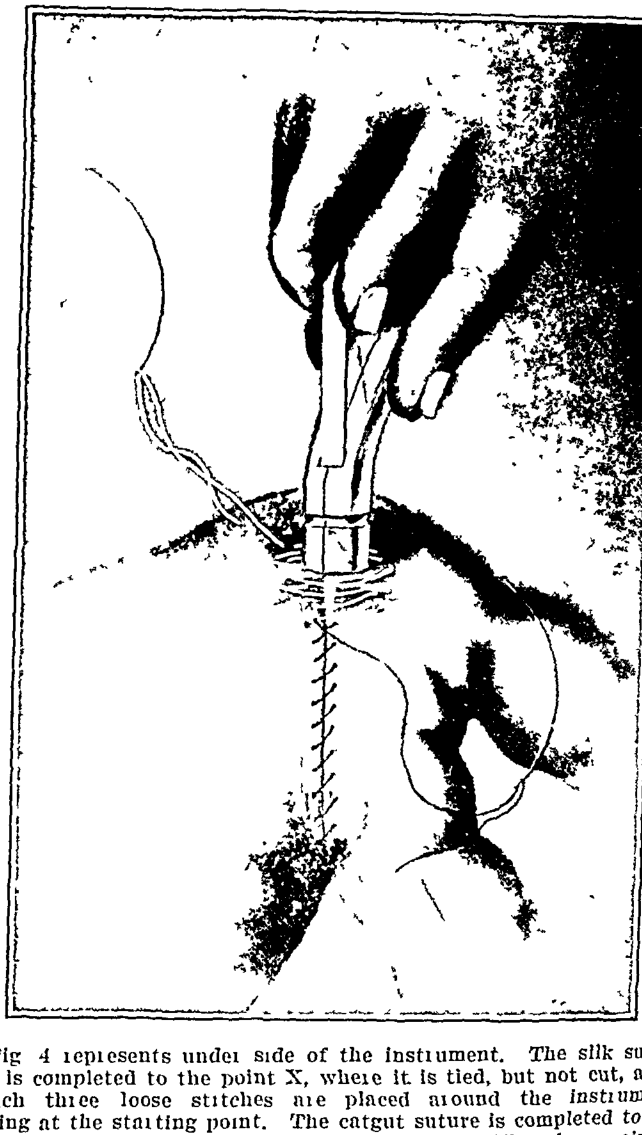

Fig 4 represents under side of the instrument. The silk suturing is completed to the point X, where it is tied, but not cut, after which three loose stitches are placed around the instrument, ending at the starting point. The catgut suture is completed to the point * where it is also tied and left long. The sharp pointed stylet is pushed into the tube formed by the two longitudinal grooves in the blades, thereby severing the intermedial visceral walls and also the two pursestring ligatures which were placed primarily around each blade.

I have extensively tested this instrument on cadavers, but so far made only nine anastomoses on six living persons, all of which proved eminently successful.

In gastro-enterostomy I have always performed the anterior one, but the posterior could with this instrument, be performed just as easily. The jejunum has been attached to the stomach about 50 cm. from its upper end and always isoperistaltic. The entero-anastomosis is about 20 cm. below the gastro-enterostomy. Lavage of the stomach before the operation has not been done in the last four gastro-enterostomies, and I never needed to do it after the operation. Generally, I commenced to give my gastro-enterostomy patients light diet on the second day after the operation, or as soon as the effect of the anesthesia had disappeared, and full diet about a week after the operation.

NARRATION OF CASES.

Case 1.—Mrs. J., 48 years old. Gastric trouble for over ten years and during last month daily vomiting after meals. Tumor palpable in epigastrium. Very anemic and cachectic. Diagnosis: cancer of the stomach. At the operation the anterior wall of the stomach was found extensively adherent to the anterior abdominal wall, the loosening of which resulted in tearing a big hole in the stomach whereby some of the gastric contents escaped into the abdominal cavity. After extensive resection and repairing of the anterior stomach wall anterior gastro-enterostomy *without entero-anastomosis* was performed with this instrument. Perfect recovery. Several months after the operation I saw this patient again, perfectly well as far as her stomach was concerned, but complaining about lumps on her neck, evidently cancer metastases, from which she finally died without having experienced any more trouble from her stomach.

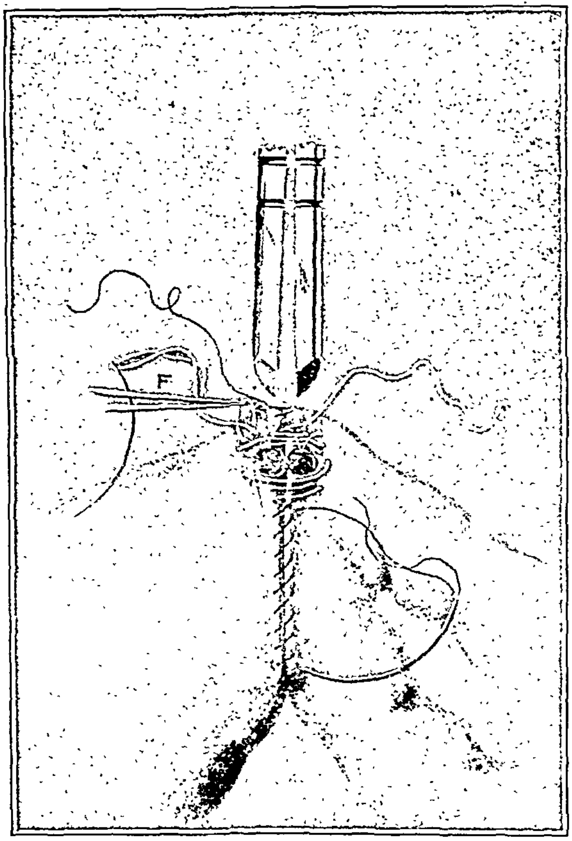

Fig. 5.—The instrument is removed. The primary puckers around each blade of the instrument, which were cut by the sharp-pointed stylet, are picked up by a dissecting forceps, F. The edges of perforation produced by the instrument are to be inverted, the stitches already placed tightened and the two ends of the silk suture tied together.

Case 2.—Mrs. L., 48 years old. Gastric trouble with vomiting for years, several times bloody. No palpable tumor. Very anemic and poor. At the operation was found a large pyloric tumor and extensive metastases in both omenta. Anterior gastro-enterostomy without entero-anastomosis with my forceps. This patient was considerably improved by the operation but had, as well during her stay at the hospital as afterwards, several attacks of circulus vitiosus. From my experience in this case I have always since combined gastro-enterostomy with entero-anastomosis.

Case 3.—Mrs. M., 60 years old. Symptoms of partial intestinal obstruction for years. Movable, palpable tumor in lower part of abdomen. Anemic and poor. Operation. Intestinal tumor as large as a fist, apparently malignant, narrowing the lumen to the size of a lead pencil and numerous metastases in mesenterium and retro-peritoneal tissue, some of them impossible to remove. Intestinal anastomosis with my forceps. Left hospital evidently cured of the symptoms of obstruction and has not been heard from since.

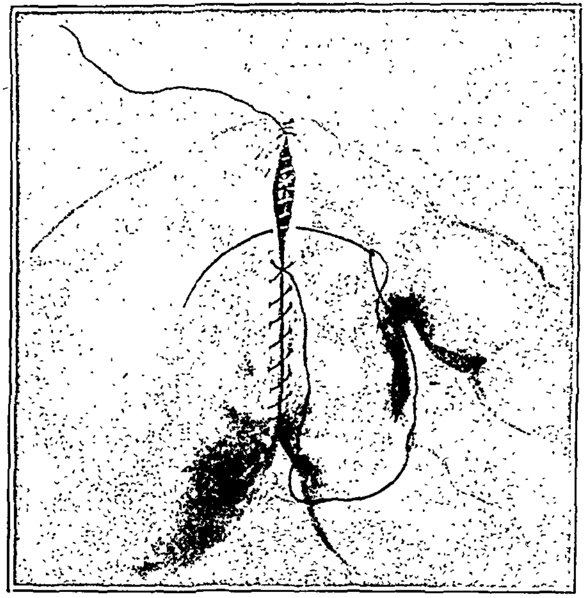

Fig. 6 shows the silk suturing completed. The last two or three catgut stitches are then finished and the two ends of the catgut tied together.

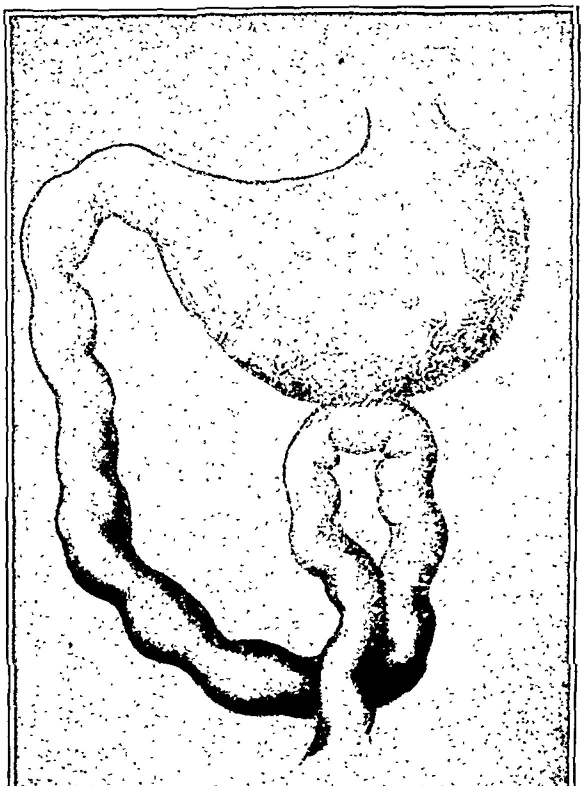

Fig. 7.—Diagram of the anastomosis completed. The intestinal anastomosis is performed in exactly the same manner as gastro-enterostomy.

Case 4.—Mr. S., 51 years old. Symptoms of pyloric stenosis and dilatation for many years. About six years before the operation I taught the patient to use the stomach tube with which he got along for awhile. He finally came back asking for relief from the fearful vomiting which kept him awake nearly every night. No palpable tumor. Somewhat anemic but not cachectic. Operation revealed a very dilated stomach with a moderate degree of pyloric stenosis. No malignant tumor. Anterior gastro-enterostomy and entero-anastomosis with my instrument. Perfect recovery. Has several times afterwards reported that he is in perfect health and follows his occupation as a farmer.

Case 5.—Mrs. O., 43 years old. Symptoms of cancer of the stomach, with pyloric stenosis. Large palpable tumor. Nearly constant vomiting. Utterly anemic and poor. Although an operation was described to her in a very unfavorable light she wished to undergo the same as a means to get relief in one way or the other. Anterior gastro-enterostomy and entero-anastomosis with my instrument, after having seen the impossibility to remove all cancerous metastases. Complete relief from all gastric symptoms and she left the hospital three weeks after the operation more grateful than any patient I ever saw before. Some time after she had left the hospital I heard that she was feeling well and relishing nearly all kinds of food.

Case 6.—Mrs. S., 43 years old. Symptoms of pyloric stenosis and palpable tumor in epigastrium. Diagnosis: pyloric cancer. Wished to be operated on to get relief. Operation revealed a pyloric cancer, making resection impossible on account of numerous metastases. Anterior gastro-enterostomy and entero-anastomosis. Complete relief from gastric symptoms. Latest news from her, about six weeks after the operation, reports everything all right.

CONCLUSIONS.

Any kind of lateral anastomosis is rapidly performed, about one-half hour being generally sufficient. The size of the anastomosis opening can be made larger or smaller, as the need may be, by pushing the blades more or less deeply into the bowel before the forceps are locked. Leakage of visceral contents during the operation is, with ordinary care, nearly impossible.

With the instrument in the bowel the sewing can be done with ease very rapidly and substantially. It leaves no foreign body in the bowel to be expelled afterwards. A surgeon with limited experience in intestinal work can, with this instrument, perform lateral anastomosis with comparative safety.

Post-operative hemorrhage from the stomach is prevented by crushing of the tissues with the forceps, by the suturing and the cauterization of the cut edges. No hemorrhage has so far occurred in any of my cases.

ETIOLOGY AND TREATMENT OF CHRONIC CYSTITIS.

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OMAHA.

Comparatively little work has been done in the last ten years on the scientific investigation of cystitis. Some, however, has been done which is very valuable, and from it I shall take the liberty of drawing very freely.

ETIOLOGY.

The etiology of cystitis is essentially a bacteriological problem. The germs most frequently found are, in order of frequency, colon bacillus, streptococcus, staphylococcus in several species, typhoid bacillus, gonococcus of Neisser, proteus vulgaris and the tubercle bacillus. The fermentation of the urine has been shown by Melchior and Muller to be rather a result of infection than a cause of cystitis, certain germs producing ammonium carbonate from urea, thus converting the urine into an ammoniacal substance, giving an alkaline reaction. The chief germs which do so are the micrococcus of urea, species of the pyogenic germs, and occasionally the colon bacillus and *Proteus vulgaris*. It will be found in a goodly number of cases—perhaps one-half—that the urine is acid and we may still have the evidences of cystitis present. In most text-books is found the statement that in chronic cystitis the reaction of urine is alkaline. Melchior's work develops that a great majority of cases of chronic cystitis are acid. Robert Tyler[1] says that "in the majority of cases urine is acid." Brown[2] of Baltimore says "contrary to the opinions expressed in the majority of text-books, a great majority of the infections of both bladder and kidney are associated with acidity of urine—i. e., are due to micrococci, which do not split up the urea." Young[3] of Baltimore holds the same opinion.

In our own experience in sixteen cases of chronic cystitis we have found the urine to give an acid reaction in ten cases and alkaline in the others. Rovsing[4] in thirty cases found only three acid and the remaining alkaline. The gonococcus, the bacillus of tuberculosis, the colon and bacillus all seem to develop and grow best in an acid urine. It is, therefore, a plain fact that since in cystitis we have various infections, it is well to study with care the bacteriologic reactions in each separate infection and the character of treatment which is most often of value to a particular infection. Before treating a case of chronic cystitis I should desire to know the reaction of the urine and the principal germ present. Occasionally there may be several infections at the same time. However, one is usually predominant and, I think, by ordinary plate growths, it can be readily segregated.

We must not forget, however, the other side of the problem, viz.: That we can have the bladder subject constantly to infection and still have no cystitis present. The urine is the avenue for excretion of many forms of infection from the tissues of the body. It is only a perfectly aseptic fluid when it is perfectly normal, and it is perhaps rare that it is perfectly normal, so that the bladder is constantly subjected to infections of all kinds, but only occasionally does the infection lodge. It is difficult for a germ to lodge and grow on the squamous epithelial cell of the fundus of the bladder and also nearly as difficult on the transitional cells of the base of the bladder. We must, therefore, have other abnormal conditions present besides the actual presence of germs.

Reymond[5] has shown that an infection may travel from the tubes and uterus and develop a cystitis. Melchior has demonstrated that they may pass from the rectum through the bowel and cause a cystitis. The presence of foreign bodies, as is well known, may cause a cystitis, e. g., stone; retention of urine as behind an enlarged prostate; a bladder which is poorly nourished; certain spinal diseases, blows, falls and injuries in the region of the bladder, all have a predisposing influence toward the production of cystitis, but these may exist and without germs we will not have cystitis. Germs may enter the bladder in several ways: *a*, from the kidneys; *b*, urethra; *c*, by unclean instruments; *d*, from tubes, uterus and rectum; *e*, by the blood; *f*, by the lymphatics.

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1. Medical News, 1896, vol. lxviii, p. 669.
2. New York Medical Journal, August, 1901, p. 391.
3. Johns Hopkins Bulletin, January, 1901.
4. Blasen-Entzündüngen, Berlin, 1890.
5. Annales Mal. des Organ, 9, April, 1893.

Dividing the etiology of cystitis for purposes of description into predisposing and exciting causes, we have as exciting causes the various germs above mentioned, and as predisposing causes the mechanical and chemical irritations above tabulated.

TREATMENT.

In treating all cases of chronic cystitis we must first consider the predisposing cause or causes. If the predisposing cause is extravesical in the beginning it is hard to cure it by intravesical treatment. The external cause must be carefully considered. If we find a prolapsed bladder or an enlarged prostate we can not hope to permanently cure the resulting cystitis unless the condition producing it is removed. Belfield always claims cystitis to be only a symptom of some other disorder. This is a very good point to consider. But, when the infection once has gained a hold in a bladder it is necessary that it should be treated itself, even though the predisposing cause may have been removed, for the infection in a bladder having obtained, it is as resistant to limitation or cure as it was difficult to gain a hold in the first place.

The treatment may then be classified under the following heads: *a*, internal medication; *b*, washing bladder; *c*, instillation into bladder; *d*, topical application; *e*, stretching bladder (Young); *f*, operation.

The character of the medication must depend upon the reaction of the urine. If it is acid, a drug converting urine into an alkaline reaction is called for. Urotropin and benzoic acid are the best form of drugs for a cystitis which gives an alkaline urine, and are of very little value in a case where the urine is already acid. It is a fairly good rule to follow that if a germ lives and flourishes in an acid medium, its growth will be retarded, if not destroyed, in alkaline media, and vice versa. On this theory we must proceed in internal medication for chronic cystitis. We have not time to discuss in detail the different remedies and their use, only to condemn the indiscriminate use of urotropin in all forms of cystitis. It should be used only in those cases producing alkaline urine. Locally, it has been our custom to proceed as follows: An infected bladder is washed out with a saturated solution of boric acid until the solution returns clear. This may be done through a return current catheter. But if this can not be introduced without pain, as over an hypertrophied prostate, a rubber catheter or lisle thread catheter may be used. The latter is often the best. Fill up the bladder under hydraulic pressure of about two or three feet, until it is painful. Repeat several times until the fluid returns clear. In the cystitis of gonorrheal or pyogenic origin we then instill into the bladder a 1 to 5000 silver nitrate solution about once in three days and in bulk about 30 c.c., increasing the strength until it becomes too irritating, reaching a strength of 1 to 200 in some cases.

In infections from the colon and tubercle bacilli we have found mercuric chlorid to be a very efficient remedy to instill into a bladder which has been washed out clean by some good antiseptic. We use about 30 c.c. of a 1 to 20,000 solution, putting it into the bladder once in two or three days as the irritation seems to allow, gradually increasing in strength. This should never be used in gonorrheal cystitis nor silver nitrate in the tubercular form. In tubercular cystitis we have often obtained good results from instillation of about two drams of a 10 per cent. solution of iodoform in glycerin, used in the same manner as above. We would not recommend the use of potassium permanganate in any case in the bladder. If this method does not succeed we proceed to drain by surgical interference.

Perineal drainage is generally superior to suprapubic drainage in all cases except it be for the presence of a stone or some foreign body which can not be removed by the perineal route. In woman it is rarely necessary to drain the bladder, but when necessary it can be done through the anterior vaginal wall. Then by good drainage and the usual washings and hygienic after-treatment and perfect rest when possible, we can hope for good results.

The purpose of this paper is, therefore, to impress the value of a careful consideration of the bacteriology of chronic cystitis, and to urge a rational treatment for the same.

Clinical Report.

A UNIQUE CASE OF VESICAL CALCULUS.

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AND
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James Trimble, Co. D, 63d Pennsylvania, aged 62 years, says he was wounded at the second battle of Bull Run, Aug. 29, 1862, while in a kneeling posture, by a ball which entered the inner side of the left thigh about five inches below the groin. A puckering cicatrix verifies his statement. He says he was treated in the army hospital, where futile efforts were made to locate the ball; that the wound healed uninterruptedly, and that he was soon enjoying his usual good health.

During January, 1902, he commenced to have vesical derangement and was troubled more or less until July 30, 1902, when he was admitted to hospital with retention of urine. An attempt to catheterize him was made, but was unsuccessful; the catheter could not be passed beyond the prostatic portion of the urethra, where it met a hard resisting substance. On palpation, a hard tumor about the size of a walnut could be outlined at the base of the penis.

A diagnosis of vesical calculus was made and lithotomy decided on. Suprapubic lithotomy was performed July 31 and a calculus with a flattened lead musket ball nucleus was removed. Considerable difficulty was experienced in removing the calculus, as it was encysted in a cul-de-sac near the neck of the bladder. It could not be removed with stone forceps and had to be extricated by introducing the fingers into the bladder. When the calculus was extricated a considerable quantity of pus was liberated from an abscess cavity which had formed at the left side of the calculus. The calculus and ball weighed 580 grains.

When did the ball enter the bladder? It probably was not in the cavity of the bladder prior to the beginning of the trouble in January, for up to that time he had had no symptoms indicating its presence. It could not have penetrated the bladder wall at the time of receiving the wound, or there would have been an extravasation of urine into the pelvic cavity with dire results.

The rational conclusion is that the ball began its passage through the bladder wall at the time of the appearance of the first vesical symptoms in January and succeeded in penetrating the wall by the slow process of ulcerative absorption.

At the time of the operation, the patient was somewhat weak and emaciated, but withstood the operation very well.

This case is unique in that the time intervening between the reception of the wound and the presentation of the symptoms was forty years.

Physicians and Politicians.—If medical men paid more attention to politics politicians would pay more attention to medical men's interests.—*Alienist and Neurologist.*

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EPILEPSY AND RESPONSIBILITY.

As our knowledge of nervous and mental diseases has developed there has come the realization that the present popular state of feeling as to intentional malicious actions, and especially the interpretation and application of the laws with regard to crime, must undergo a decided modification, if a system of injustice in the name of right is not to be perpetuated and serious wrong done with short-sighted good intentions. This has become manifest in nothing more perhaps than in the gradual evolution of our knowledge of epilepsy. The generally accepted ideas as to the criterion of right and wrong in others' actions fall before the observed anomalies as to moral responsibility occurring in this protean disease, for the study of which modern life is providing so many opportunities that fortunately are not being neglected by our generation. From it come some of the most valuable practical lessons of modern psychiatry. Hundreds of years of study of free will in the abstract have not given so much real knowledge on this subject as the last twenty years of careful observation of the phenomena of conduct in connection with the varying diseased mental states of the epileptic. Here, as in so many other departments of anthropology, pathology has stepped in to supplement the knowledge gained from supposedly more positive sources, and has supplied a key to at least part of the mystery that was so shrouded in obscurity before.

The change of thought on this important subject has come so quietly that many of us are hardly aware of it. It constitutes, however, one of the most practically important features of modern medical progress, especially as on medical men must devolve the propaganda of the newer ideas in order that they may produce their due impression in the minds of our generation and be reflected in our legislation and the interpretation of existing laws. The legal standard of criminal responsibility so often judicially assumed even at the present time is that the knowledge of the distinction between right and wrong constitutes the essence of punishable malice when materially criminal acts are committed. This old-time criterion must give way before the declarations of psychiatrists, that the intelligence of epileptics may be unimpaired, yet the emotions and volitions be so disturbed as to be at times beyond the patient's control.

In an article[1] on epilepsy and its relation to crime, read before the Rochester Academy of Medicine, Dr. William P. Spratling illustrates by selected cases the fact that it is not the continuously insane epileptic that is liable to commit crime, but the patient who has long, perfectly lucid and responsible intervals, that may at any time, however, be interrupted by the irresponsible phase of the disease, yet without the slightest preliminary symptomatic warning to betray it. When the attacks of epilepsy, instead of being of the classic motor type, are what is known as "psychical epilepsy" or the "psychical epileptic equivalent," then the appreciation of the amount of the responsibility involved in a given act becomes one of the most difficult problems with which the alienist has to deal. Spratling does not hesitate to declare that established proof of the presence of the psychical epileptic equivalent ought to settle the absence of responsibility beyond reasonable doubt. When we consider that epilepsy must have a beginning, that it sometimes only asserts itself late in life, that not infrequently, until some great emotional strain calls out an exaggerated exhibition of the stigmata of the neurosis, it may have produced symptoms so slight as to escape the notice of any but a most expert observer in such matters, it can be seen how cautiously judgments as to responsibility must be made. How many people there are who have queer moods into which even friends do not inquire too closely. The intricacy of this problem of moral responsibility takes on additional difficulty of solution as progress of knowledge shows the increased possibilities of imperative or uncontrolled pathologic conditions assuming sway over the individual in the midst of apparent mental health.

The opinions thus expressed are an echo of what psychiatrists have been insisting on for some time. Kraepelin may be taken as the representative of progressive German psychiatry in this matter. His opinion as stated by Defendorf[2] is that "in more than half the cases (of epilepsy) intellectual activity is impaired, though proportionally to a less degree than the emotions or volitions." In a word, there is a distinct tendency to that moral insanity whose independent occurrence has often been disputed. This renders accountability almost minimal in many cases, and its recognition would do away with most of the false legal maxims that now unfortunately hamper the true course of justice.

Many of the ideas that are now confined to specialists in mental diseases will have to become common property before a change in the legal status of the irresponsible can be looked for. It is the plain duty of medical men generally to see that proper notions on these subjects become widespread in order to lead up to such modification of present-day persuasions as will be worthy of the stage of culture of our generation.

THE UNHEALTHFUL LONG SKIRT.

The German correspondent of the *Medical Press and Circular* in a recent issue tells of a Teutonic crusade against the corset and the trailing skirt, which he considers has, like the French anti-alcohol agitation, come to stay. It is encouraging to learn this, for it is not long since that we heard that in German society it was considered almost immodest for a woman to dispense with the corset. It seemed to be considered a sort of defensive armor against masculine arms. The corset has long been under medical condemnation; and we do not believe that the women of the present day suffer so severely from its effects as did their ancestresses, though the fashion-plate ideals are bad enough yet. It can even be considered in some special cases and in some of its modifications as having a utility, but it is hard to find how to say a good word for the trailing skirt. Indoors it is a somewhat perilous sacrifice of hygiene to conventional esthetics, but on the street it is in every sense an abomination. With the old-fashioned way of letting it sweep the sidewalks and crossings its untidiness was alone enough, one would think, to disgust women into its disuse. At the present time it is more the fashion to occupy one hand in holding it up behind, a very ineffectual method of securing either cleanliness or hygienic safety, and certainly inconvenient enough it would appear. Moreover, the bodily twisting it requires tends to produce deformity and should the practice continue long enough we may expect to see the female half or more of our species become generally one-sided, with hypertrophied latissimi dorsi and spinal curvature. No man, or woman either, can complacently anticipate such a result: and, moreover, there is nothing really becoming or graceful in the practice, but rather the reverse. It seems as if it might be an effect of a dissemination of a knowledge of the germ theory of disease, and perhaps we may hope that a spread of information as to the deforming possibilities of the present popular custom will be the last straw that will break the camel's back of fashionable slavery to the trailing or posteriorly uplifted skirt.

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[1] Journal of Nervous and Mental Diseases, August, 1902, p. 481.

[2] "Clinical Psychiatry," A. Ross Defendorf. Macmillan Co. 1902.

Esthetically as well as hygienically the abbreviated walking skirt is far ahead, and this fact appears to have been appreciated in one, at least, of the two national dressmakers' conventions lately in session. It is hardly to be expected that health-considerations simply as such would carry things in such a body. A plea was made for the short petticoat, and perhaps in our ignorance we assume that this implies or includes also more brevity of the outer lower garment, on the ground of its conducing to greater gracefulness in walking. Our opinion on this point is sufficiently made clear by what has been said. and we believe most of the male sex share it: it is therefore some satisfaction to find that the professional or commercial arbiters of fashion are of a similar mind.

Of course. to us professionally the health considerations are first. but we are glad to recognize any aid that may be available for the good cause. Anything that will make less urgent the perennial cry for reform in woman's dress. especially as regards the trailing skirt, ought to be most welcome.

DISCRIMINATION IN PHYSICAL CULTURE METHODS.

The large amount of expensive advertising which is done nowadays by the propagators of various physical culture systems betokens a patronage considerable enough to pay for the outlay and probably a handsome profit besides. Considering the fact that the teachers of these various systems, either by personal direction or by correspondence, set individuals at vigorous physical training which often has no relation to the person's peculiarities or physiologic needs, it follows that not a little harm may be done, and that, therefore, the subject merits the attention of physicians who may sometimes be consulted in the matter.

It is one thing to say, as a general statement, that people do not exercise enough, but it is quite a different matter to start them on the task of building their muscular system after the model of the athletes whose pictures appear so regularly in the advertising pages of our magazines. Exercise certainly is desirable for the furtherance of active metabolism, of good repair and excretion of waste materials, but large muscles in this day and generation serve little purpose indeed. In developing an exaggerated muscular system it is quite possible to sap the vitality. Men of experience in physical training not rarely see individuals with large muscles well used and yet with poor general health. And large muscles, once obtained, must be lived up to or else, like other unused organs, by their very existence they will render one more prone to disease.

Another point open to criticism is the method itself by which is taught the attainment of athletic proportions. The much advertised systems of working without gymnastic apparatus amount largely to the scheme of offering resistance to one set of muscles by the contraction of an antagonistic set. As Dr Sargent, the well-known head of the Harvard School of Physical Training, writes in a letter, this "is anything but physiologic. How to relax antagonistic muscles, not how to contract them, is the desideratum." Whether we are desirous of attaining greater facility in the use of any given muscles or whether we are aiming at the better metabolism which increased circulation of blood and lymph brings, this statement of Sargent's seems obviously true. Then, too. the get-strong-quick phase of these advertised methods must necessarily result in the acquiring of impermanent strength and surely cause a harmful strain on any circulatory apparatus unaccustomed to much physical exertion. We do not hesitate to say that harm will be done by the methods of directing exercise on the basis of muscle measurements, especially when this exercise is taken indoors.

However, it must be confessed that through these advertised "systems" there has been aroused much popular enthusiasm for exercise among the men and women who need it most, and this of itself is good. The subject has been too little touched on by the most competent authorities in ways that might help to form safe opinions for both physician and laity.

REGULATION OF VENEREAL DISEASE.

We present this week a portion of the proceedings of the *International Conference for the Prevention of Syphilis and Venereal Disease*, recently held at Brussels, and the report will be completed in our next issue. As perhaps might have been expected, no very definite statement of policy was agreed on; the differences of opinion were not less marked than at the earlier congress three years ago. It is evident that absolute agreement as regards the questions of regulation of prostitution is still far off, and that neither this congress nor perhaps many future ones will end the discussion.

The agitation of moral questions will never be successfully suppressed, and as the world progresses they are becoming still more important factors in our civilization. There is one here involved that will not be readily downed, and which—even if regulation were an unqualified success, which admittedly it is not—would still arise to trouble its advocates. Some legal measures do seem possible, however, and it may be that both sides may yet come together in regard to some points of public prophylaxis. For example, the notification of venereal disease and the application of legal penalties for communicating disease to innocent parties are practicable to a certain extent and should be enforced.

It seems a question to us, in spite of the opinions favored in the conference, whether the ordinary restrictions of medical secrecy should apply to their full extent in case of venereal disease; at least it should be *permissible to warn innocent victims against exposure.* It does also appear that some practical police regulation and sanitation without any legal recognition of the evil might be possible and have some good effect in seaports and in connection with military garrisons, and that this might be made compatible with earnest effort to suppress it as far as possible.

Nothing should be done that will encourage a feeling of safety in immorality, and here comes the difficulty in the case. In fact, the difficulties multiply with the consideration of the conditions, and the position of the abolitionists of no compromise with the evil is really the only consistently logical one after all, whatever one may think of its practical application. There is no question, of course, as to the value of moral and educational measures, and in these we have our greatest hopes. Whatever is done should not be such as would in any way lower our moral ideals. No community is ever better than its ideal, and the lower this ideal the more probable is its moral degradation.

NASAL THERAPY FOR DYSMENORRHEA.

Five years ago Fliess published a monograph on the connection between nasal and menstrual conditions, the main thesis being that in the nose there are two "genital spots," one the tuberculum septi and the other on the inferior turbinated, which in many women show congestion and sensitiveness during menstruation. In some cases of severe dysmenorrhea Fliess found he was able to control the pain by application of cocain to these "spots," and more rarely he permanently cured the menstrual difficulty by cauterization of the same region.

The idea of relationship between the upper respiratory tract and the genital organs in woman is much older than the contribution by Fliess. Bleeding from the nose and pharynx during menstruation has often been noted, and the same periodic phenomenon has been recorded in cases of amenorrhea caused by pregnancy, the menopause, or pathologic conditions. Since the publication by Fliess of his findings the subject has been discussed at length in some Continental medical societies and has been reported on by a number of clinicians, all of whom seem to find a certain percentage of cases amenable to this treatment. Schiff found cocain effective in 35 out of 41 cases, and concluded that it was of service in those cases where the pain persists after the flow is well established. Koblanck, Ruge, Knorr and Krönig have all reported series of cases favorably affected. More lately Ephraim[1] has been successful in arresting the pain of intense dysmenorrhea in 18 out of 24 cases treated by cocain. In Amann's clinic Linder[2] has been studying this subject for the last two years on a series of 30 cases. The relief from pain has been so marked that some of the patients have returned to have other painful disorders treated.

The influence of suggestion in rendering this treatment effective has been discussed time and again and proves a difficult question to decide. Schiff carefully undertook to rule out this factor and found that applications of water were ineffective. Linder reports a special series of 16 cases selected with great care in order to test more exactly this nasal therapy. In 10 of these cocain caused cessation of pain, sometimes lasting 24 hours. When the pain had returned Linder tried a second application, this time secretly substituting plain water for the cocain solution. Two of the 10 were again favorably affected. Repetition of the cocain treatment then proved effective in all cases. Linder is forced to think that in some instances suggestion is the strongest factor in the result, although it must be remembered that even water causes physiologic effect on the nasal mucous membrane. For him the question of a nasal dysmenorrhea remains *in suspensio,* but the striking number of cases which are relieved by nasal therapy, which is harmless whether or not it involves suggestion, recommends a method which ought to be equally welcome to physician and patient for the treatment of such an obstinate disorder. The cocain is applied on a pledget of cotton through a speculum, 2 or 3 drops of a 10-20 per cent. solution, and is carefully limited to the "genital spots," so that there is no danger of intoxication. To be effective it may have to be repeated in 15 minutes. The cessation of pain, even if for only overnight, is extremely grateful to the patient. Cauteriza-

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1. Allg. Med. Cent.-Ztg., March 12, 1902. (Abst., Journal A. M. A., April 5.)
2. Münchener Med. Wochenschrift, June 3, 1902.

tion, in the experience of several men, permanently cures far fewer cases of dysmenorrhea than cocain temporarily relieves.

ANOTHER STATE SOCIETY JOURNAL.

At its last annual session the Michigan State Medical Society decided to replace the annual transactions by a monthly journal. The initial number is before us, bearing the title of "The Journal of the Michigan State Medical Society," and is a credit to the society and to the officers who have the journal in charge. There are thirty-six reading and twelve advertising pages. Dr. A. P. Biddle, the efficient secretary of the society, is the editor.

DISINFECTION VS. VACCINATION.

Last February the health officer of the city of Cleveland published his account of "How Cleveland was Rid of Smallpox," a paper that has attracted considerable attention, especially among the laity (it was published in a popular magazine as well as in a medical journal), on account of its apparent magnification of the value of disinfection in the prophylaxis of this disease. The Journal has already noticed[1] the sanitary misconceptions to which it gave rise, and more recently the Ohio State Board of Health, in its August-September bulletin, takes up the subject and shows how really inefficient the disinfection procedures were. The *Cleveland Medical Journal* for September also takes up the question, speaking with the authority of one on the ground, and shows that the local epidemic was practically at an end when the present health officer went into office. He simply gave the corpse a kick by this showing and his claims for the efficiency of disinfection. The stir that has been made over it by the anti-vaccinationists has about as much basis as that on the utterly fictitious data they sometimes use. The subsequent recrudescence of smallpox in Cleveland in spite of disinfection ought to be an object lesson, but, of course, it will weigh nothing with the extremists who will still parade Dr. Friedrich's antisepsis as a conclusive evidence that smallpox is only a filth disease and vaccination a failure. It is to be very much regretted that the Cleveland health officer does not more explicitly repudiate any intention to overvalue disinfection at the expense of vaccination; his (unsigned) letter to the secretary of the State Board of Health, while it is practically a surrender of any special claims, yet has the appearance of avoidance of direct statement to that effect. The whole affair is an unfortunate one for him and he ought to spare no pains to correct the false impressions his imprudent publication has created.

MALIGNANT DISEASE OF THE VERMIFORM APPENDIX.

It will not be denied that the one certain means of preventing recurrence of appendicitis is removal of the offending organ. There are still a considerable number of practitioners, however, who adhere to medicinal treatment for the attacks, but who also realize that recurrence may take place at any time. The difficulty of the situation and the danger from nonsurgical intervention resides in the fact that no one can determine in advance the nature of an attack and its mode of termination, so that the vast majority of clinicians have come to believe that the risk of operation is to be preferred to the uncertainty of outcome without surgical intervention. An additional factor that must be taken into consideration in this connection is pointed out by Drs. R. H. Harte and R. N. Willson,[1] namely, the possibility of malignant disease of the appendix giving rise to symptoms of inflammation of that organ. They report two cases of this character in which the disease was limited to the appendix, and refer to 16 others of the same kind, collected from the literature, and also to others in which, while the appendix was the primary seat of the disease, extension had taken place to adjacent tissues. All of the cases in which it appeared probable that the disease was limited to the appendix presented the symptoms of ordinary relapsing appendicitis, but in none was the true state of affairs suspected. In some a small tumor was present, but this was mistaken for a concretion in the lumen of the appendix until the latter was laid open. In others there was no macroscopic evidence of new growth. In one there was extensive suppuration with adhesions and a perforation in the appendix. Existing statistical evidence tends to show that malignant disease of the vermiform appendix is rare, but the large majority of the cases have been reported within recent times, so that it may be inferred that the disorder will be detected with greater frequency as the practice becomes more common of examining histologically appendices removed at operation or after death. In explanation of the formation it is suggested that it is the result of a primary inflammation long present and semi-quiescent, but breaking down the resisting power of the tissues in connection with some unusual disturbance in the general or local nutrition.

INTRAVENOUS INJECTIONS IN RABIES.

At the present time no one fully informed and free from prejudice doubts the efficacy of the Pasteur treatment for rabies. In the Pasteur Institute in Paris the number of deaths of the cases treated during the past fifteen years has been less than 1 per cent. For the year 1901 there were five deaths in 1,321 cases treated, that is, a mortality of 0.38 per cent. It is acceded by those especially interested that a more intensive method of treatment than the present is highly desirable in order to avoid the rare failures, and in order, if possible, to achieve better success than now in the cases which come under treatment a long time after the infection. Recently Krasmitski[2] has experimented with the intravenous injection of the virus of rabies used for immunization. He finds that such injections are not especially dangerous, provided that the virus is in emulsion, filtered and well diluted, and that the fluid is heated to 37 degrees. Such intravenous injections produce a more substantial immunity more rapidly than the usual means of vaccination. In the rabbit, for instance, which is the most susceptible animal, such injections may prevent death from intracranial inoculation of the virus which is otherwise always fatal. Experiments have been made also on human persons bitten by rabid animals, especially in grave cases. These experiments showed the harmlessness of the method in man and also an apparent increased efficacy. On the whole, the results seem to be distinctly encouraging, but further work and observation are necessary in order to determine the exact value of this new form of Pasteur treatment. During the summer months especially cases of fatal hydrophobia are not rare in our cities and elsewhere. These are cases that from neglect or ignorance or inability have failed to avail themselves of the opportunities offered for Pasteur treatment by various institutions in this country. No doubt a thorough study of the occurrence of hydrophobia in the United States and its fatality would reveal that the disease is more frequent and more destructive of human life than we have believed or realized. In a country so large and so rich as this there ought to be established several institutes of a public character for the treatment of rabies. France now has half a dozen such institutes scattered in various centers. The private institutions now existing in this country are doing good work no doubt, but it would hardly be expected that they should reach the highest degree of scientific efficiency without direct financial support, either by the state or by endowment. Furthermore, some sort of propaganda should be started from time to time in order to keep alive among the people the fact that after bites by animals supposed to be rabid or actually rabid safety only lies in prompt resort to the Pasteur treatment.

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[1] Issue of May 3, 1902, p. 1365.

[1] Medical News, Aug. 2, 1902, p. 193; see The Journal, Aug. 16, ¶15, p. 397.

[2] Ann. de l'Institut Pasteur, 1902, xvi, 393-417.

Medical News.

COLORADO.

Mortality.—During August 836 deaths were reported in the state, a mortality of 17.14 per 1000 per annum. Typhoid fever caused 51 deaths, diphtheria 17, and scarlet fever 2.

Typhoid Increase.—Colorado had 644 cases of typhoid fever in August, an increase of 415 over the previous month. Denver had 148 cases and Arapahoe County a total of 156 cases.

Personal.—Dr. A. A. Blackman has returned to Colorado Springs, after a visit of two months in Japan.——Dr. Claude E. Cooper, Denver, has been appointed a member of the State Board of Health, vice Dr. George E. Tyler, deceased.

Millions for the Sick.—By the will of the late W. S. Stratton $1,000,000 is left to build the Myron Stratton Home for Sick Persons in Colorado Springs, and the balance of the estate, after payment of bequests, is to be used for the maintenance of the institution.

ILLINOIS.

A Western Bloomingdale.—It is announced that Dr. Henry J. Brooks, after several years of arduous labor, has succeeded in interesting capitalists and physicians in the establishment of a great hospital for the insane, modeled on the lines of that at Bloomingdale, N. Y. A large sum is said to have been pledged and several prominent alienists of Chicago have expressed their approval of the scheme. The profits are to be devoted to the care of indigent patients.

Personal.—Dr. William G. Bechtold, Breese, had a peculiar accident, September 10, whereby he lost the terminal phalanx of his right forefinger. He was sponging his horse's mouth, when the animal sneezed, closing his teeth over the doctor's finger, completely severing it.——A farewell dinner was given by twenty physicians of Champaign and Urbana, on September 19, to Dr. J. Ora Pearman, who is about to move from Champaign to Mahomet.——Dr. Everett H. Butterfield, Ottawa, has been re-elected physician of La Salle County.——Dr. and Mrs. Frank J. Mittan, Colfax, who are about to move to California, were presented by their friends in Colfax with a set of solid silver spoons, knives and forks, September 10.

Chicago.

Midwife Fined for Practicing Medicine.—Mrs. Paulina Taeschler, a midwife, was fined $200 by a jury in Justice Everett's court, September 18, for practicing medicine without a license. The woman operated a private maternity.

Personal.—Dr. Thomas A. Woodruff, editorial secretary of the *Ophthalmic Record*, has been elected professor of ophthalmology in the Chicago Eye, Ear, Nose and Throat College.——Dr. and Mrs. Albert B. Hale have returned after a summer abroad.

Illinois Medical College Commencement.—The annual commencement exercises of this college were held at Handel Hall, September 25, a graduating class of 34 receiving diplomas. The doctorate address was delivered by Judge John Barton Payne. The annual banquet took place at the Auditorium Hotel in the evening.

Transferred to University.—The College of Physicians and Surgeons, now the medical department of the University of Illinois, has conveyed to the latter the old West Division High School property at Ogden avenue and Congress Street, which it acquired from the city last year. The consideration named in the transfer was the same as in the deed from the city, $186,000.

Typhoid Decreasing.—The typhoid mortality has fallen from 10.5 per cent. of the total mortality during the first week of September to 7.8 per cent. last week. The typhoid deaths for the three weeks of the month have been 55, 43 and 38 respectively, and although there were 18 more cases in the County Hospital at the close of the week, there is every reason to believe that, if the precautions so generally enforced during the past six weeks be continued until cold weather sets in, there will be nothing more than the usual seasonal increase of the disease during the remainder of the fall.

Comparative Mortality.—The 487 deaths from all causes reported during the week ended September 20, represent a yearly mortality of 13.83 per 1000 of population, as compared with 14.13 the week previous and 12.68 in the corresponding week of 1901. The excess, as compared with last year, was chiefly from chronic diseases unfavorably affected by low temperature. Thus Bright's disease carried off 25 victims, or nearly double the number (14) in 1901; consumption 76, as against 33; pneumonia 43, as against 32; from the same cause the deaths among the aged were also increased—92 deaths of those over 60 years last week, and 76 in the corresponding week of last year.

Alpha Omega Alpha Society.—Very recently there has been organized in the senior class of the College of Physicians and Surgeons what the organizers believe to be the first honorary society in a medical school in this country. It embodies features not unlike the Phi Beta Kappa Society in literary colleges. It resembles much more closely, however, the Skull and Bones Society of Yale because of the high general standard required. Not more than 15 juniors will be elected to membership, and the remainder to be chosen out of that class will be elected by these members in their senior year. Not more than 30 names are to be considered for election from any one class of over 200 students, and the proportion can never exceed one-sixth of the class. The constitution will allow chapters in other medical colleges of the highest standing only, and honorary members may be admitted, who shall in every case, be men or women eminent in the profession. The object of this fraternity is to maintain a high standard of thought and action in medical schools and in the profession, and to endeavor to encourage the high ideals supported by earnest students and practitioners everywhere.

MARYLAND.

Baltimore's Deaths.—For the week ended September 20, the deaths were 193. The typhoid deaths numbered 9, the same as last week, but only 71 new cases of this disease were reported. Consumption increased in mortality to 31, and pneumonia to 11.

Alleged Abortionist Imprisoned.—Dr. William B. Hawkins, who forfeited his bail by failing to appear for trial last February on the charge of causing the death of a woman here by criminal operation, was arrested September 18, in Philadelphia, and is in jail in Baltimore.

New Sanatoria.—Drs. George W. Todd and J. McFadden Dick have formed a stock company for the purpose of building a sanatorium at Salisbury, opposite the Peninsula General Hospital. This is the first institution of the sort on the eastern shore of Maryland.——The Maryland Quarter Club has collected $2300 towards the erection of a sanatorium in the mountains of Maryland for the treatment of consumptive patients.

Personals.—Dr. Howard A. Kelly has given $10,000 for the extension of the gynecologic ward of the Johns Hopkins Hospital.——Dr. J. L. Truax has gone on a trip to Newfoundland.——Dr. J. W. C. Cuddy has been appointed clinical professor of dermatology in the Baltimore University.——Drs. George J. Preston, R. B. Warfield and John H. Grimes have returned from Europe.——The Health Commissioner has appointed Dr. Albert D. Driscoll one of the health wardens.

May Start Laboratory.—Dr. Franklin P. Mall, professor of anatomy in the Johns Hopkins Medical School, Baltimore, has returned from New England where he passed the summer. During most of his vacation he was busy with professional studies on the island of Little Chebeague, in Casco Bay, where he devoted himself to study of the human embryo and investigation of the habitat of the salt-water clam. His discoveries in the latter direction are said to have a commercial bearing. Other Hopkins men who go to the same place are Drs. Harmon Morse, professor of chemistry; W. H. Howell, professor of physiology, and R. G. Harrison, associate professor of anatomy. The congregation of so many Hopkins men at one place has suggested to them the erection of a small laboratory on the island of Great Chebeague for private research during the hot weather.

MISSOURI.

Medical Students Dine.—About 150 students of the Kansas City Medical College were guests at a dinner given by the faculty, September 16, in honor of the opening of the college year.

Personal.—Dr. William H. Mayfield, St. Louis, has been in Colorado Springs, endeavoring to secure a site for a sanatorium for consumptives, to be established under the auspices of the Saturday and Sunday Hospital Society of St. Louis.——Dr. Samuel H. Headlee, St. James, celebrated his semi-centenary in medicine, September 2.

Proposes Permanent Hospital.—Dr. Leonidas H. Laidley, medical director of the Louisiana Purchase Exposition, offers the suggestion that the Stillman Infirmary idea be used in the building of the Exposition Hospital. He believes that some philanthropist might be found who would aid the plan so that the hospital could be made permanent, with its endowment, to carry out the plan of the Stillman Infirmary for sick students attending Washington University. The suggestion carries with it the inference that the World's Fair Hospital would be erected on the Washington University tract of the Exposition site, remaining there after as a corporate part of the university ground.

Levering Hospital Staff.—The medical staff of Levering Hospital, Hannibal, held a meeting September 9, and organized by the election of the following officers: President, Dr. John N. Baskett; secretary, Dr. F. Janet Reid. The following assignments were made: Consulting physicians, Drs. Stephen G. Smith, and Richard Schmidt; attending surgeon, Dr. Thomas C. Chowning; consulting surgeons, Drs. Henry L. Banks, and John J. Bourn; attending obstetrician, Dr. Henry L. Banks; consulting obstetricians, Drs. Stephen G. Smith, and F. Janet Reid; attending gynecologist, Dr F. Janet Reid; consulting gynecologists, Drs. Stephen G. Smith, and Thomas C. Chowning; oculist and aurist, Dr. Edward T. Hornback, and pathologist, Dr. John N. Baskett.

NEW MEXICO.

New Sanitarium in Santa Fe.—Sister Ursula, superior of St. Vincent's sanitarium, Albuquerque, is planning to commence the erection of a new sanitarium in Santa Fe about April 1, 1903.

St. Joseph's Sanitarium.—Albuquerque now has a model nitarium, complete in every detail, large enough to meet the quirements of a large city, and furnished with the most improved equipment for hospital service. It has been erected at cost of nearly $50,000. The operating rooms were equipped the Bernalillo County Medical Association.

Tent City for Consumptives.—A tent city for consumptives to be established in the suburbs of Santa Fe. A tract of nd has been bought in the foothills southeast of the city, ith southern exposure, whereon will be laid out a model tent ty, with water supply, electric lights, telephone, sewer, etc., be a sanitarium on a new and large scale. A number of ew York health-seekers have already applied for tents.

Sanatorium at Silver City.—The new wing of St. Joseph's ospital, Silver City, which is to be used exclusively as a sanatorium for the treatment of pulmonary tuberculosis, has just been completed. The administrative work is in the hands of Dr. Earl S. Bullock, the bacteriologist first assigned to Fort Bayard by the medical department of the United States Army, and under his guidance there has been a gradual growth of the work. The accommodations soon became limited and with characteristic energy the Sisters built the addition to the hospital just opened, which is designed for ambulant patients.

NEW YORK.

Buffalo.

Term Opens.—The medical department of the University of Buffalo will begin its fifty-sixth annual session, September 29.

Vaccination of school children began Monday. The health commissioner supplies shields to each child vaccinated. Circulars of instruction as to the care of vaccinated arms, printed in English, German, Polish and Italian, will be sent to parents.

Emergency Staff Reorganized.—Because of the death of Dr. Clayton M. Daniels the Emergency Hospital staff has been reorganized as follows: President, Dr. John H. Pryor; vice-president, Dr. William C. Krauss, and secretary, Dr. Vertner Kenerson.

Personal.—Dr. George Roberts has returned from a five months' visit in Europe.——Dr. C. Stolzenbach of Hanover, Germany, has recently visited the city.——Dr. Jacob M. Kraus has gone to Denver, Colorado, for his health.——Dr. Max C. Breuer has returned from Europe.

The August mortality was at the rate of 16.86 per 1000 per annum. There were 47 deaths from pulmonary consumption, 76 from cholera infantum, 8 from typhoid fever, and 28 from cancer. Total deaths for August were 520 as compared with 551 for the corresponding month of 1901.

New York City.

Personal.—Dr. Allen Fitch, New York City, has resigned and will spend two years abroad in the study of insanity.——Nothing has yet been heard of Dr. William H. Bates, who so mysteriously disappeared August 30.

Spitting Ordinance to be Enforced.—Dr. Joseph H. Raymond, the assistant sanitary superintendent having charge of the Borough of Brooklyn, announces that he will rigidly enforce the ordinance prohibiting expectoration on sidewalks, railway platforms and other public places.

New Hospital in Jamaica.—A new hospital is to be established in Jamaica, Queens Borough. Rev. Henry Zimmer has donated a plot of ground 125 by 125 to the Dominican Sisters of Brooklyn as a site for the new building. The present plan is to build a modern hospital, with all equipments, to cost from $25,000 to $30,000.

An Interrupted Operation.—Just as a patient in the Polyclinic Hospital had been etherized and the first incision made for some operation on the intestine, an explosion in the sterilizing apparatus put the surgical apparatus out of commission. A hurry call was sent to Bellevue Hospital for an ambulance, and the wound having been hastily dressed the man was rushed at top speed to that hospital, and the operation completed. He died, however, in a few hours.

Thief in Bellevue.—An orderly in the interne's quarters of Bellevue Hospital has been arraigned in court on the charge of stealing clothing, jewelry and surgical instruments from members of the house staff. It is said that he has carried on his thefts for months, and that these stealings represent in value over two thousand dollars. When arrested there were upwards of fifty pawn tickets on his person, and a large assortment of surgical instruments was found at his lodging. He had formerly been a patient.

The Straus Milk Charity.—For the past twelve years, through the philanthropy of Mr. Nathan Straus, the poor have been supplied in the summer from numerous milk depots with Pasteurized and modified milk for infants. The Health Department records show that the mortality among infants under five years of age has steadily decreased during these years, and it is asserted that this diminution is most marked in those districts of the city in which this milk is most freely distributed. The summer mortality has been reduced about one-half, largely, it is thought, through the good work of this charity.

Fresh-Water Doctor Fined.—Adolph Grundman, sixty-three years old, who styles himself a "fresh-water doctor," was committed to the City Prison for thirty days in the Court of Special Sessions, September 11, on the charge of having practiced medicine without a license. Grundman was arrested on August 23 on complaint of Mrs. Mary Vlack of 349 Third

Avenue, who testified that her husband had been treated during July and August by Grundman, and that he had prescribed fresh water internally and externally. He supplied the water at $5 a pail, and four pails were used. There being no improvement in her husband's condition, Mrs. Vlack became suspicious and complained to the authorities.

Rigid Medical Inspection in the Schools.—So far, although only a portion of the children attending the public schools have been examined by the medical inspectors, about two thousand have been excluded because of some form of contagious disease. This has called forth indignant protests from the parents, but the Health Department announces that it is willing, so far as it is practicable, to treat medically such of these children as are too poor to receive the proper care from private physicians. The Health Commissioner has now very greatly reduced the number of school physicians, and has increased the salary four-fold. In return for this better compensation, each of these medical inspectors is now required to look after three schools, making daily visits to each school, and each day personally inspecting all of the scholars in one of these schools. In this way all public school pupils are to be inspected once every three days. The results have already amply justified the change, as under the old régime less than one-tenth of the number of cases of contagious disease would have been detected and excluded.

OHIO.

Cleveland College Opens.—The Cleveland College of Physicians and Surgeons, the medical department of Ohio Wesleyan University, held its opening session, September 17.

Niles City Hospital.—The Niles City Hospital Company has been organized with Dr. Thomas O. Clingan, president; Dr. Charles T. Swaney, vice-president, and Dr. Curtis C. Williams, secretary and treasurer.

Post-Graduate School in Cincinnati.—A movement is on foot to establish a post-graduate medical school in Cincinnati. The faculty will be composed of members of the faculties of Miami Medical College, and the Medical College of Ohio.

Tuberculosis Commission.—The governor has appointed the following commission to investigate as to the advisability of the establishment of a state sanitarium for tuberculosis: J. H. Outhwaite, Columbus; Max Senior, Cincinnati: Dr. Charles E. Slocum, Defiance: J. M. Rusk, McConnellsville; S. S. Knabenshue, Toledo; Cady Staley, Cleveland, and J. Warren Smith, Columbus.

PENNSYLVANIA.

Latrobe Health Board.—Drs. Joseph D. Casey and Lauren C. Thomas have been appointed members of the local board of health.

Uniontown Hospital.—At a meeting of the Uniontown Hospital Association, September 18, the contract for the erection of the building was awarded. The building is to be 143 by 90 feet, will accommodate 80 patients, and will cost about $65,000.

Philadelphia.

Low Mortality.—For the week ended September 20, 336 deaths were reported. This is a lower death rate than for any corresponding period for years.

Additions to Orthopedic Hospital.—New buildings, at a cost of $150,000, are being erected as additions to the Orthopedic Hospital and Infirmary for Nervous Diseases. They include a five-story and basement hospital building, a power house and basement kitchen.

Guggenheim Increases Gift.—Meyer Guggenheim of New York has added $20,000 to his gift of $60,000 for the erection of a hospital for private patients on the grounds of the Jewish Hospital, Philadelphia. The structure will be larger than originally planned. It is expected that not only this building, but the other new buildings of the same institution, the Loeb operating building and the Eisner building for nurses will be finished by Jan. 1, 1903.

GENERAL.

Change in Army Medical School Faculty.—Col. Calvin De Witt, assistant surgeon-general, U. S. A., is detailed as president of the faculty of the Army Medical School, to relieve Col. Charles Smart, assistant surgeon-general, U. S. A.

Health of Army Improves.—The report of the surgeon-general for the year ending June 30 last shows a gradual improvement in the condition of the health of the troops, notwithstanding many were subject to exposures of tropical service in the Philippines. Concerning the health of the troops in the islands, the report says:

> The character of service in the different parts of the archipelago has varied more during the year than in any similar period since American occupation. Although a great deal of hard field service has been done and much new country occupied, there has been a decrease in sick and mortality rates, for improved conditions in peaceful provinces have more than balanced conditions where there was active service.

Yellow Fever Germ Found.—The expected announcement of the yellow-fever germ is reported in the telegraphic news from New Orleans as given by Prof. George Beyer, of Tulane University. The commission sent by the U. S. Marine-Hospital Service has for several months been at Vera Cruz studying the epidemic which was of a particularly pernicious type, the mortality at one time reaching the frightful figure of 87 per cent. The germ of the disease was definitely found, and its character and habits fixed. It is of much higher order of life than had been anticipated, being an animal, not a vegetable organism. That found in the bodies of sufferers from the disease was identical with the germ found in the mosquitoes. During the epidemic at Vera Cruz the mosquitoes were especially numerous. The authorities of the Mexican city determined to inaugurate a war against the insects and appointed a committee, with Professor Beyer at the head, to exterminate the mosquitoes. The result of the war was that the number of cases of yellow fever were reduced one-half. Professor Beyer would not say whether the germ discovered at Vera Cruz was or was not the Sanarelli germ, but the belief is that it is a germ never before discovered.

Mosquitoes on Ships.—An investigation by the U. S. Marine-Hospital and Public Health Service has just been concluded by Surgeon H. R. Carter concerning the extent to which vessels are infected with yellow fever by mosquitoes. His conclusions are summed up as follows:

> 1. Vessels aboard which yellow fever had been contracted—i. e., vessels infected with yellow fever have not been rare, at least at Southern quarantine stations.
> 2. Such vessels are much rarer since 1893, and are not very common now.
> 3. That the diminution of the number of infected vessels reaching United States ports is due mainly to the sanitary measures for avoiding exposure to infection in the foreign ports, and to the substitution of steam for sailing vessels. To some degree the falling off of the vessels from Brazilian ports is also a factor.
> 4. That a case of yellow fever developing aboard a vessel plying between Southern ports of the United States and the tropics will probably infect the vessel so that other cases can, if time be given, be contracted aboard her.
> 5. Such vessels, however, if short trip vessels, not more than ten or twelve days en route after the occurrence of the case of yellow fever, will in general be disinfected at Southern quarantine stations before any other cases have been contracted aboard, although harboring infected mosquitoes.
> 6. That a case of yellow fever so occurring aboard a vessel from a Southern port of the United States would be able to infect her or not according to whether she had acquired the mosquitoes *Stegomyia fasciata* in the tropical port.
> 7. It is, in general, then necessary to disinfect all vessels running between Southern ports and tropical ports if a case of yellow fever occurs aboard, no matter where it be contracted, while vessels running between Northern ports and the tropics may, through precautions in tropical harbors, have no stegomyia aboard, and are thus not infectable by cases of yellow fever occurring aboard.

Smallpox.

Colorado: There were 9 cases reported in July, 7 of which occurred in Prowers County.

Connecticut: During August 12 cases were reported from 6 localities.——The secretary of the State Board of Health, in the August Bulletin, discusses the vaccination question as follows:

> The question of prime importance relating to public health at the present time is the prevention of the spread of smallpox. At no time in the history of the United States has this disease been more generally prevalent. It has occurred within the last few years in every section of the country between its ocean boundaries. As the cold weather approaches and compels the closing of dwellings, schools and factories, outbreaks of the pestilence will occur with increasing frequency in the towns and cities that have neglected the only effective means of arresting its progress, *namely, vaccination.* The exceptional mildness of the prevailing epidemic is a source of danger, rather than of safety. Its victims are sometimes so slightly ill that they travel in the trains, exchange visits with their neighbors, and even the doctors dispute the diagnosis.
>
> Innumerable instances of its communication in this manner are reported. Quarantine and disinfection of such instances are wholly impracticable. The only safety of any individual is by vaccination. The only protection for a community is vaccination. The fact of its protective power is as well settled as any fact in sanitary science. The exhaustive investigation of the whole subject of vaccination by the English Royal Commission and its final verdict, the experience of over 100 years in the practice of vaccination throughout the civilized world, and especially the results in European countries where vaccination is compulsory and the law is enforced, give unanimous testimony to its safety when properly practiced, and to its protective power.
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> The only serious objections urged by the anti-vaccinationists can be avoided by well-known means. Nevertheless by the activity of

these objectors, their unscrupulous falsification of statistics, their unblushing mendacity and their sensational appeals to the fears and the prejudices of the credulous and uninformed, they have assumed a fearful responsibility in hindering the arrest of smallpox by their opposition to vaccination.

An instance of their misrepresentations is quite recent. They have announced and widely published that in the city of Cleveland, Ohio, smallpox had been stamped out by disinfection and without vaccination. The facts are, however, that instead of being stamped out, it so increased after stopping vaccination that Buffalo and other lake cities felt so much endangered by its prevalence there, that they "seriously considered the advisability of establishing a quarantine against it," and threatened that "unless immediate action be taken and results shown, quarantine will be instituted in a most vigorous manner."

This threat communicated to the State Board of Health of Ohio aroused its attention, and the Connecticut Board was informed by letter last week, from the secretary of the Ohio Board, that vaccination is going on at the rate of 10,000 per day in Cleveland.

The general vaccination of a community is in the interest of the taxpayer. The average cost of an epidemic of smallpox in a town is often many times what it would have cost for full protection from it. And with the epidemic comes the cost of both. It is well for prudent selectmen and city councils to think of this.

Illinois: Smallpox has been reported to the State Board of Health during the past week from DuBois, Washington County, and Chandlerville, Cass County.

Indiana: In one home in Monroe County there are seven cases of the disease. Many cases are said to exist in Ridgeville.

New York: The smallpox epidemic which has been afflicting Rochester since the latter part of last April has been stamped out. The Health Department report shows that the disease was brought to the city by two tramps from Troy, N. Y., about four months ago.

There have been 142 cases and 17 deaths from the disease, and 37 persons were detained at Hope Hospital at different times as suspects. The death-rate was 11.97.. In less than six weeks more than forty thousand persons were vaccinated. Of the $50,000 appropriated by the Common Council $28,000 was expended in fighting the disease. A curious incident of the epidemic was that 92 of the 142 cases were found in 22 families, 13 cases occurring in one family which did not believe in vaccination.

Ossining had three smallpox cases last summer, and now the village trustees are confronted with bills aggregating $5,210.30. A local doctor who took charge of the cases put in a bill for $2,000 for fifty visits made in twenty-five days, $40 a visit or $80 a day. The patients were kept in a houseboat anchored in the river. The boat, it is estimated, cost about $25, but the board of health agreed to pay $225 for it. In addition to this there is a bill of $189 for the use of a sailboat, power launch and towing. Two towboats cost $84. There is another charge of $50 for rent of another boat. The grocery and meat bills for patients amounted to $337.34, besides $33.75 paid to a hotel for persons kept out of their homes by the quarantine, making the total $371.09. The patients are said to have consumed $130.50 worth of whisky, about 2½ quarts a day. The clothing bill amounted to $182.38. In addition to all this the board has a bill of about $60 for building a pesthouse that was never used. A man who earns his living by fishing put in a claim for $200 for deprivation of the use of the beach.

Ohio: The health officer of Cleveland has invited John D. Rockefeller to provide a fund to be used in the search for the germ of smallpox. He has contended for some time that cats and dogs are the worst distributers of the smallpox germs that can be found. The hair of either animal may be filled with the germs and then a child may play with the pet. The result is another new case of smallpox. If the dog is permitted to run at large the danger is more than doubled. He has accordingly issued an order. The doctor insists that in all families where smallpox is discovered and where there is a dog or a cat the animal must be killed.——The Cleveland City Council has appropriated $40,000 to be used in combating the spread of smallpox.——At a special meeting of the Youngstown Board of Health, September 19, the following resolution prepared by Dr. W. L. Buecher was unanimously adopted: "Smallpox aging epidemically in Pittsburg and Cleveland, the board of ealth considers it its duty to advise the citizens of Youngsown to abstain from visiting those cities, except on necessary usiness, and the board of health strongly condemns the unning of excursion trains from and to these cities."

Pennsylvania: More than 50 cases of smallpox have ocurred at Rock Run, near Coatesville. Eight special officers have been detailed to enforce quarantine. Aid is asked from Philadelphia.——The Johnstown board of health has decided on the erection of a municipal hospital to cost $10,000 to replace the one above Morrellville, where an epidemic of smallpox exists, for which the hospital is blamed.

United States: Investigation shows that from Dec. 28, 901, to June 13, 1902, there were in the United States 36,373 cases of smallpox and 1,154 deaths resulting from the disease. As compared with the previous year there was an increase of 8,000 cases and nearly 600 deaths. In New York there were 1,522 cases and 233 deaths; Massachusetts had 1,088 cases and 146 deaths; Indiana, 1,346 cases and only 10 deaths; Kansas, 1,885 cases and 3 deaths, and Minnesota 6,940 cases and 31 deaths.

FOREIGN.

New Medical Institution at Frankfurt.—Frankfurt a. M. is planning the erection of an Academy for Practical Medicine, with which will be connected an official establishment for testing the new drugs and artificial foods put on the market every year. A laboratory for medico-clinical diagnosis is also to be a feature of the institution.

Advantages of a Medical Mayor.—Dr. Augagneur is mayor of Lyons, France, and has banished from the public places under his jurisdiction the advertisements of persons claiming to cure venereal disease. He has also vetoed all applications for the erection of projecting signs by magnetic healers, trance healers, massage establishments, etc., and revoked all previous permits for the same.

Supervision of the Teeth of School Children in Denmark.—The town of Frederiksberg in Denmark has hired a dentist to inspect the teeth of the school children regularly twice every year. Parents are notified by a printed circular whenever the teeth of their children are found to need attention. The supervision extends to both the public and private schools, and has proved a most salutary measure, as was officially announced with details at the recent Danish dental congress.

Medical School in Cochin China.—Our exchanges state that the French government has appropriated funds to found a medical school at Hanoi for the purpose of training native physicians and for the study of tropical diseases. The faculty will have oversight over the Pasteur Institute in Annam, a laboratory for the production of vaccine and serums, and for bacteriologic research, etc. A French hospital is also to be erected at Canton for the use of the natives, and $40,000 has been sent to the consul there for the purpose.

The International "Centralbureau" for the Crusade Against Tuberculosis.—This central committee comprises 120 men prominent in the campaign against tuberculosis. As already announced, it will assemble at Berlin October 22. The chief aim of the conference is to frame a constitution and define and discuss the questions of the day in regard to the white plague. Another feature of the assemblage will be the attempt to bring into co-ordination the so-called "wild tuberculosis congresses" and have the entire movement everywhere proceed along certain regular lines.

Deaths Abroad.—Don Federico Rubio, an eminent surgeon at Madrid, founder and editor of the imposing quarterly, *Revista Ibero-Americana de Ciencias Medicas*, and at one time ambassador from Spain to England. His clinic was a focus of light for Spain and Spanish America. *El Siglo Medico* remarks that his entire life was inspired with the "purest and most beneficent of all motives, the love of posterity." He was in his seventy-sixth year at the time of his death.——E. Teinturier, Paris, a prominent neurologist and writer, connected with the *Mouvement Médical* and the *Progrès Médical* since their foundation. He was particularly interested in the interpretation of miracles by the light of modern neurologic science and his works on this subject are well known.——B. Alcina, professor of therapeutics at Cadiz.——H. Dagonet, formerly professor at Strasburg and physician in chief of the asylums for the insane in the department of the Seine, which includes Paris.——R. A. Riant, Paris.——A. Graefe, Berlin, a member of the famous Graefe family of ophthalmologists.——L. Switalsky, privat docent of gynecology at Cracow.

The Cholera Epidemic in Egypt.—A pilgrim returning from Mecca managed to conceal the fact that he was ill and was passed by the quarantine authorities at Tor and allowed to proceed to his home in a remote village in Upper Egypt as being free from disease. Soon after his return home numerous cases of sickness developed in his village, but the fact that it was cholera was not recognized until 96 persons were affected. The vigorous measures then instituted had the effect of spreading the disease broadcast, as the natives abhor disinfection, isolation, etc., and at the first intimation of sickness fled to distant villages. Even in the houses in which deaths from cholera had occurred, and which were guarded by native sanitary officials, clothing and other articles gradually vanished. Some of these officials think that cholera was invented to provide them with a salary and opportunities for making a little pocket money. The disease is now epidemic, according to a report quoted by the *Allg. Med. Ct.-Ztg.*, in sixty places and in every province. About 90 per cent. of the cases terminate fatally, and as is readily seen from the official reports given weekly on the last page of THE JOURNAL, the condition is serious and growing worse. The prospects of the first Egyptian Medical Congress, organized for December of this year, are already blighted.

Correspondence.

Gastroptosia not Gastroptosis.

NEW YORK CITY, Sept. 15, 1902.

To the Editor:—In answer to the letters of Drs. N. O'Donnel Parks and William J. Robinson in THE JOURNAL of August 23, instead of writing a long letter I wish to refer to my paper "Greek in Medicine," read before the Book and Journal Club of Johns Hopkins University and published in this year's May number of *Johns Hopkins Hospital Bulletin*, translated also into Greek, German and Dutch. The translations appeared in Cyprus, Munich and Utrecht. It shall give me pleasure to send a report of the original or some of the translations to any colleague who will honor me by writing for them.

Here are some passages which are applicable to what my opponents have said:

"Twenty years ago, in an article which appeared in the *Berliner Klinische Wochenschrift*, Virchow said: 'Is it not justifiable at the present time to remind the physicians that they should use all possible exertion to show their scientific training in all, even in apparently small things? Is it not the first characteristic of a man of science that he should understand how to employ the language of science? The first thing by which the expert demonstrates his qualification is the correct use of technical terms; this especially causes respect for him, and nothing more enhances his utility'; and he closes his remarks with the wish that his views might be generally adopted. If we address this admonition to the medical profession at large we shall have to say: Would it not be justifiable at the present time to remind the profession to prove our science by establishing a scientific onomatology? The incorrectness of many of our medical terms can not be denied, but the extent of this incorrectness is larger than most of us have ever conceived; the evil is increasing every day, and the remedies thus far suggested have only brought confusion; they are not, and have not been, taken seriously; they have only brought discredit.

"It is not necessary to enumerate all the vain attempts at reformations of our onomatology; a single one, and I select the one which is most conspicuous at present, will suffice. We shall see why they were all of no avail, but we shall also see how we really can secure scientific onomatology which will stand as long as our science is taught, and which will be beyond all criticism."

I have to refer to the paper itself about the plan I have suggested.

"The facts I have presented to the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland will, I am certain, find an echo in the medical profession. There exists a well-pronounced demand by all true men of science for purity and correctness of medical language. Professor R. Kossmann of the University of Berlin, whose name as a gynecologist is familiar to you, but who is not only a gynecologist, but has also distinguished himself as a philologist, says: 'In forming our pathological and surgical technical terms we can by no means dispense with Greek, and so long as we admit that the retention and introduction of Greek synonyms for pathological and surgical expressions is a necessity, we have for the sake of correctness and beauty of language to decide to go a step further, to do away with hybrid terms and establish pure Greek synonyms in their place. Whoever has familiarized himself with classical literature will find it more and more intolerable to name a scientific conception by a Greek- or Latin-like sounding word-monstrosity, especially when he knows the real Greek name.'"

If my opponents will look up the literature on the question of atonia gastrica they will see that the agitation for correctness of medical terms has not only a scientific but an eminently practical importance.

Further, if the gentlemen will look up the voluminous literature on this question since I have introduced it—if they will read the views of some of the most prominent men of our profession, they will certainly change their ideas and will perhaps regret to have pronounced them.

A. ROSE.

ASHTON, R. I., Aug. 28, 1902.

To the Editor:—Recurring to the inane controversy about appendicitis and perityphlitis, the latter word is itself a confession of ignorance on the part of those who use it. The word means inflammation in the neighborhood of, *περί*, about the cecum, *τυφλον*. "There is an inflammation somewhere," they say, "we do not know where, but it has reference to the cecum, anyway." They ignore the appendix, a rudimentary organ which has no other apparent object than to create trouble by exciting inflammation (perityphlitis). They fight about words; mistake the effect for the cause, temporize, mistreat the case, and the patient dies.

In another case a practical surgeon, unskilled in philology, is called in. He at once pronounces the case to be appendicitis, neither knowing, perhaps, nor caring for the derivation of the word, nor casting a thought on it or its meaning. He promptly operates, removes the peccant organ, cures his patient and saves a valuable life to the world.

To those philologists who object to the word appendicitis as being mongrel I would suggest a term which I fear will not be adopted. It is ekphyoskolekociditis, *'εκ*, out of; *φύω*, to grow; *σκώληξ*, a worm, and *ειδός*, form, which is almost a literal translation of appendix vermiformis from Latin into Greek, plus "itis." I am loth to assume the parentage of this word; it is uncouth; let it *go*: let appendicitis stand.

N. O'D. PARKS.

P. S.—In your issue of August 23 you made me sign myself H. instead of N. O'Donnel Parks. The man who printed my letterheads is responsible for this. The N does really look like H.

N. O. P.

Quack Advertisements and Religious Papers.

RIDGWAY, PA., Sept. 20, 1902.

To the Editor:—This last summer I drafted and presented to the official board of the First M. E. Church of this place, being a member of the board, a set of resolutions, drawing attention to the falseness of statements and dishonesty of purpose of various advertisers of "patent" medicines, and condemning the publication of such advertisements by the publishers of our church periodicals. The resolutions were passed, but two members of the official board voting against them. I took the ground that it was detrimental to the interests of the church that the papers should receive a profit from so false a business. Copies of the resolutions were sent to the various church publications circulating in this district. If necessary this move can be followed up to the annual and general conferences.

J. C. MCALLISTER.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

SODIUM GLYCOCOLATE IN DISEASES OF THE LIVER.

SHERWOOD, MD., Sept. 12, 1902.

To the Editor:—I have received a number of letters from readers of THE JOURNAL since the publication in the August 16 number of the article by Dr. T. W. Keown of Baltimore, entitled "Sodium Glycocolate in Diseases of the Liver," in which he mentions three cases of gallstones cured by me by the use of this remedy. The letters make inquiry of the particular preparation I have used in the treatment of these cases. Dr. Keown did not state in his article that the remedy I used was not a pure salt of soda and glycocolic acid but a mixture of salts formed with soda and all the bile acids. The preparation used by me is made by Dr. Herbert Richardson of Mt. Hope Retreat, Md., from the fresh liver of the bullock, and supplied me by Hynson, Westcott & Co., of Baltimore. I have not met with success with other preparations known as glycocolate of soda in the treatment of cholelithiasis. H. Burton Stevenson.

MALARIA WITH ANASARCA.

Arkansas City, Ark., Sept. 19, 1902.

To the Editor:—Replying to the query of Dr. Morse in The Journal of September 13; the anasarca caused by malaria is common, more common, however, is edema of the feet. A hydremic condition of the blood resulting from malarial cachexia causes this condition. For literature I would refer the Doctor to Tyson's Practice, First Edition, page 70; and to DaCosta's Physical Diagnosis, Eighth Edition, pages 831 and 959. Wilson & Ashton, in Sajous' Analytical Cyclopedia, Volume IV, page 318, also describe this condition, and in Eichhorst's Practice of Medicine, Volume 1, page 382, cachexia is given under the etiology of ascites.

Very respectfully, Vernon MacCammon, M.D.

ARTIFICIAL FOODS FOR INFANTS.

Detroit, Mich., Sept. 16, 1902.

To the Editor:—Your article on "First Aid Dangers" [Editorial, August 30, page 493] touches the spot. During the past ten years I have seldom reported a birth. The various makers of baby foods seem to have no difficulty in securing the addresses of the parents of the few I have reported and they have loaded them up with samples and literature of "how to feed the baby." One New York house has issued a small "Practice of Medicine for the Use of Mothers." Of course in its preface it states "that the work is not to displace the family doctor." Yet it carefully and fully gives diagnosis and treatment (with their products) of all the diseases of childhood. A great deal of credit is due to the makers of artificial foods for infants. Still I think a number of them should confine themselves to their specialty and leave to the physician diagnosis and treatment. Respectfully, E. T. Milligan.

State Boards of Registration.

North Dakota Report.—Dr. H. M. Wheeler, secretary of the North Dakota State Examining Board, reports the examination held at Grand Forks, July 1 to 3, as follows: Number of subjects, 13; percentage required, 75; written examination; total number examined, 22; passed, 19; failed, 3.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
342	R.	Barnes Medical College	1900	75
356	R.	Barnes Medical College	1901	78
362	R.	Barnes Medical College	1902	77
343	R.	Hamline University	1901	75
354	R.	Hamline University	1902	87
360	R.	Hamline University	1901	77
344	R.	Detroit Medical College	1902	82
345	R.	Rush Medical College	1902	75
346	R.	Queen's Medical College	1902	80
348	R.	University of Minnesota	1902	77
357	R.	University of Minnesota	1902	79
349	R.	University of Michigan	1901	81
350	R.	University of Michigan	1902	79
351	R.	Trinity University	1902	80
352	R.	Trinity University	1901	83
353	R.	Trinity University	1901	85
361	R.	Trinity University	1902	82
358	R.	Physicians and Surgeons, Chicago	1902	76
359	R.	Harvard University	1901	75

FAILED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
347	R.	University of Minnesota	1902	73
355	R.	Detroit Medical College	1902	..
363	R.	Louisville Medical College	1894	..

Book Notices.

Manual of Antenatal Pathology and Hygiene: The Fetus. By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S. Edin., Lecturer on Midwifery and Gynecology, Medical College for Women, Edinburgh. Pp. 527. Price, $7.00. Edinburgh: William Green & Sons. 1902.

The author of this volume is a widely recognized authority on the anatomy and physiology of the fetus and on teratology. In this work he gives his attention mainly to fetal physiology and pathology. In its preparation he has studied nearly three hundred specimens and has mastered all the important articles which have been published by other workers. As a collector of observations Dr. Ballantyne is comprehensive and accurate, and is always careful to distinguish facts from speculations. This volume must at once take an authoritative place among medical works. Apart from its value as a storehouse of observations, it is certain to serve as stimulus to all who desire to carry on original research. The author points out the many gaps in our knowledge of fetal physiology and pathology and suggests many lines of inquiry.

Handbook of Bacteriological Diagnosis for Practitioners, Including Instructions for the Clinical Examination of the Blood. By W. D'Este Emery, M.D., B.Sc. Lond., Lecturer on Pathology and Bacteriology in the University of Birmingham. Cloth. Pp. 215. Price, $1.50. Philadelphia: P. Blakiston's Son & Co. 1902.

This little book, which is in size suitable to the pocket, was written, according to the author, for the general practitioner who has not had the opportunity furnished the rising generation to familiarize himself with the modern laboratory technic. As a result the work is quite elementary, and deals more with what the practitioner can and ought to do rather than with the details of how to do it. As a work of this class it does very well, but as it is not technical, it can scarcely be criticised along this line.

Marriages.

Leon Feingold, M.D., to Miss Rosalia Richter, both of Chicago, September 17.

Ernst Stuart Albee, M.D., Oshkosh, Wis., to Miss Harriet Altschul of Lima, Ohio.

Lee Stone, M.D., Sturgis, Ky., to Miss Eva Nall of Louisville, Ky., September 17.

W. W. Wood, M. D., Angola, Ind., to Miss Merle E. Sayler of Digby, Ohio, September 2.

Edgar S. Hooper, M.D., to Miss Emma Vickers, both of Darlington, Wis., September 3.

Xenophon Olsen, M.D., Vliets, Kan., to Miss Grace E. Johnson of Frankfort, Kan., August 27.

Felix Moraux, M.D., Luxemburg, Wis., to Miss Maggie Kiley of Green Bay, Wis., September 9.

Edward Bruce McDaniel, M.D., Baker City, Ore., to Miss Ellen Carlson of Chicago, September 13.

Albert W. Shaw, M.D., Buhl, Minn., to Miss Anna Laura Purdy of Minneapolis, Minn., September 24.

Joseph Rosenthal, M.D., Sault Ste. Marie, Mich., to Miss Fannie Ochsen of Philadelphia, September 10.

Hugh Schussler, M.D., Alton, Ill., to Miss Georgia Kober of Chicago, at West Alton, Ill., September 14.

Arthur Ruickoldt, M.D., New Haven, Conn., to Mrs. Emma Wetherbee of Burlington, Conn., September 9.

Joseph E. Westerlund, M.D., Cambridge, Ill., to Miss Emma C. Wahlberg of South Moline, Ill., September 10.

Guy L. Hunner, M.D., of the Johns Hopkins Medical School, Baltimore, to Miss Isabella Stevens, at Baltimore, September 10.

Siegfried A. Van Hoefen, M.D., St. Louis, Mo., to Miss Minnie Statler of Crawford County, Ark., at Kansas City, Mo., September 3.

Newberry A. S. Keyser, M.D., Bradshaw, Md., to Miss Caroline Blanche Rumsey, at Upper Falls, Baltimore County, Md., September 10.

James R. Barnett, Jr., M.D., Neenah, Wis., son of Dr. James R. Barnett of the same city, to Miss Agnes Chapman of Watertown, Wis., September 12.

Albert Solland, M.D., Los Angeles, Cal., to Miss Dagfine Svendsen of Southern Norway, at the residence of the bridegroom's parents in Chicago, September 17.

Deaths.

John W. Hughes, M.D., died at his home in Latrobe, Pa., September 11, from catarrhal pneumonia, after an illness of one month, aged 64. He was a prominent member of the Medical Society of the State of Pennsylvania and served as major and surgeon in the Civil war with the Fifth Pennsylvania Cavalry.

George H. Moore, M.D. Transylvania University, Lexington, Ky., 1884, who served during the Civil war on the Confederate side as surgeon of the Sixth Mississippi Cavalry, died at his home in Memphis, Tenn., September 16, aged 81.

William E. Higdon, M.D. College of Physicians and Surgeons, Kansas City, Kan., 1898, of Kansas City, Mo., died from typhoid fever, September 12, at the Sisters' Hospital, Kansas City, after an illness of four weeks, aged 35.

Henry D. Grindel, M.D. New York University, 1867, died at his home in San Diego, Cal., September 14, after a protracted illness, aged 75. He was a member of the San Diego County Medical Society.

Christopher M. Bell, M.D. College of Physicians and Surgeons, New York, 1865, a New York physician who retired from practice several years ago, died at Baden Baden, Germany, September 3.

Frederick G. Ibach, M.D. Jefferson Medical College, Philadelphia, 1879, died at his home in Mauch Chunk, Pa., September 11, from acute Bright's disease, aged 44.

John B. Du Kate, M.D. Louisville (Ky.) Medical College, 1871, died at his home in Vincennes, Ind., September 12, from Bright's disease, after a short illness, aged 60.

William B. Coburn, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1901, died at his home in Waterford, Me., September 9, from appendicitis, aged 29.

Martin Brown, M.D. Medical College of Ohio, Cincinnati, 1880, died suddenly in his rooms in Anderson, Ind., supposedly from apoplexy, September 17, aged 50.

John M. Wert, M.D. Jefferson Medical College, Philadelphia, 1880, died at his home in Philadelphia, September 13, after a lingering illness, aged 51.

George Lisle, M.D., the first white resident of Labette County, Kan., and the founder of Chetopa, died at his home in that place recently, aged 88.

Frank Lindsey, M.D., an old resident of Big Stone Gap, Va., died at his home in that place, September 13, after an illness of six months, aged 61.

Elbert A. Banks, M.D. Tulane University, New Orleans, La., 1868, an old practitioner of Columbus, Ga., died in Wynnton, Ga., September 9, aged 62.

Edmund H. Cook, M.D. Bellevue Hospital Medical College, New York, 1893, died at his home in Flushing, Long Island, N. Y., September 14, aged 39.

Mathias W. Mabry, M.D. University of Virginia, Charlottesville, 1842, died at his home in Augusta, Ga., September 9, aged 80.

William D. Eastland, M.D. Tulane University, New Orleans, La., 1892, of Vicksburg, Miss., died at Meridian, Miss., recently.

Miscellany.

Labyrinthitis After Administration of Salicylates.—Scheyer reports in *Wiener Med. Presse*, 1902, 22, the case of a laundress who was given .5 gm. sodium salicylate five times a day in treatment of a second attack of acute articular rheumatism three years after the first. After a week of this treatment symptoms of an affection of the middle ear developed and persisted notwithstanding suspension of the drug, resulting in permanent deafness, complete in one ear and partial in the other.

A Contortionist and His Medical Purchasers.—A man in Massachusetts, who was famous in his day as a contortionist of remarkable flexibility, several years ago sold his body (the goods to be deliverable after death) to a Detroit physician, who was anxious to study his skeletal formation; but after paying the money the physician died, and the heirs threw away that part of the estate as of no value to them. Another deal in futures was then made with a New York physician, but he also died. The contortionist, who is now nearly eighty years old and in excellent health, is said to be looking around for another purchaser.—*Med. Record.*

Diet in Smallpox.—According to N. S. Davis, Jr., anorexia, thirst and vomiting are noteworthy symptoms at the onset of this malady. Vomiting is usually not of frequent occurrence. Cool drinks should be given; indeed, water should be administered freely in all stages of the disease, both because it adds to the comfort of the patient, and because it will help to avert nephritis, which is an occasional complication. Febrile albuminuria is common. A liquid, non-albuminous diet will lessen or stop it. During the febrile stage a liquid diet, such as is usually prescribed in acute fevers, should be given—milk, broth, gruel, etc. Often the mouth and throat are so sore from the eruption that swallowing is difficult. Food must then be given in small portions at a time. Ice and ice cream are often grateful to patients at this time. Sometimes swallowing is so painful that rectal alimentation must be resorted to. It should not be relied on longer than is absolutely necessary, for when suppuration takes place on the skin, prostration develops rapidly, and is often very great. It is, therefore, necessary to give food by the mouth as steadily and in as large quantities as possible. Rectal alimentation must occasionally be utilized in order to help maintain strength when the stomach will not tolerate or digest food enough. Milk should be the staple article of diet. Gruels, weak tea, Mellin's food, farina and similar articles may be employed for variety. If there is no albuminuria, or if it is only trifling and transitory, bouillon, broths, raw or soft-cooked eggs, custards, and such dishes may also be used. If digestion is fairly good, as it is in mild cases, milk toast, soft-boiled rice or oatmeal, cornstarch pudding, blanc mange, gelatin jellies, finely mashed potato with meat-juice squeezed on it, may be given and will be relished. In the severer cases these articles may be given only during convalescence.—From Cohen's "System of Physiologic Therapeutics," Vol. VI.

New Instrument.

A STONE PHONENDOSCOPE TUBE.

HOWARD J. WILLIAMS, M.D.
MACON, GA.

Recently while examining a patient for stone in the bladder I wished to test the conductivity of the sounds by the phonendoscope placed over the suprapubic space while the searcher was being moved about in the bladder. The results were unsatisfactory, but the idea was suggested by the experiment of attaching the phonendoscope to the searcher.

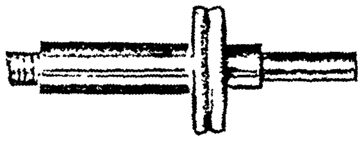

Figure 1.

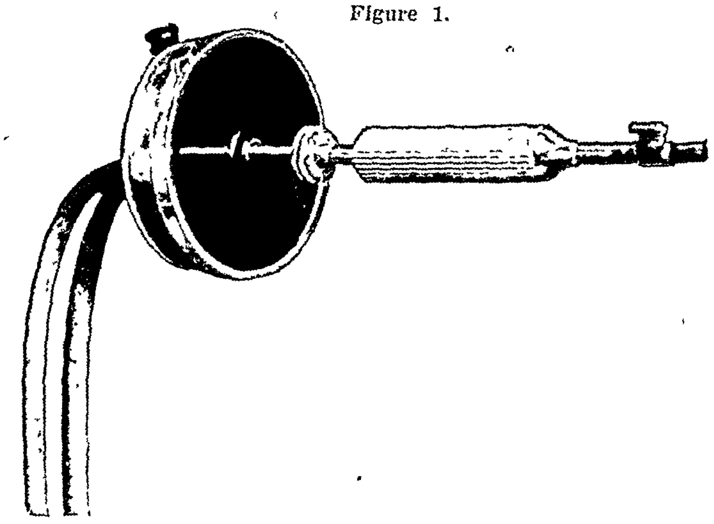

Figure 2.

A medium-sized screw was procured, the head and point of which being removed the shank fitted in the handle of a Thompson stone searcher, while the thread end caught snugly in the opening in the cardiac diaphragm of the phonendoscope. The connection being made, I repeated the examination and was rewarded by finding that the sounds were easily carried to the ear, intensified by the vibrations of the middle diaphragm of the phonendoscope.

I was so well pleased with this rough combination of the two instruments that I at once drew a design of a tube for attaching the phonendoscope to a Thompson searcher and had made the instrument illustrated in Figure 1. Figure 2 illustrates the two instruments attached by the tube ready for use.

Since the receipt of this tube, I have repeatedly tested the value of this manner of examination, both in the human bladder and by placing various foreign bodies of different characters in a rubber bag filled with water. In experimenting with foreign bodies in a bag full of water under cover, I find that not only the sounds reproduced by touching the bodies with the searcher are transmitted to the ear, but that the accentuation of the sound by the phonendoscope will reveal distinctly the physical characteristic note of each of the various bodies as the end of the searcher comes in contact with it, and further, that its size may be estimated by the duration of the sound produced as the searcher passes over it. In the human being, the rugæ of the bladder walls and the sizes of each, depending on the degree of distension of the viscus, can be noted, as the end of the searcher passes lightly over their surfaces while it is being turned about in the bladder, by a distinct muffled sound characteristic of the soft yielding mucous membrane. In the only other case of stone examined since the tube was made the characteristic click usually felt and heard in sounding was decidedly intensified by the phonendoscope and its size estimated.

I do not claim any originality in the principles on which the above instrument, if such it may be called, is made. Andrew's searcher and Billroth's sounding board attachment have long been known to the profession as acoustic aids in sounding the bladder for stone. Neither of these instruments will, however, as I know from personal experience, give the accentuated sound that the phonendoscope produces; while with either, the sound of the instrument, passing over the rugæ of a partially filled bladder, will often be mistaken for the muffled click of a soft stone. Both the phonendoscope and the Thompson searcher form part of every physician's armamentarium, while the little device above illustrated will be a material aid in the early accurate diagnosis of stone in the bladder by combining the use of two excellent instruments.

Societies.

COMING MEETINGS.

American Academy of Railway Surgeons, Kansas City, Mo., Oct 2-3, 1902.

Medical Association of District of Columbia, Washington, Oct. 7, 1902.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Birmingham, Ala., Oct. 7-9, 1902.

Idaho State Medical Society, Moscow, Oct. 9-10, 1902.

Vermont State Medical Society, Burlington, Oct. 9-10, 1902.

Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

Conference State and Provincial Boards of Health of North America, New Haven, Conn., Oct. 28-29, 1902.

Missouri State Anatomical Society.—This body met at St. Joseph, September 12, and elected Dr. Wallace B. Deffenbaugh president and Dr. Harry S. Forgrave secretary, both of St. Joseph.

American Public Health Association.—The thirteenth annual meeting of this association will be held in New Orleans, December 8 to 12, under the presidency of Dr. Henry D. Holton, Brattleboro, Vt.

Mecosta County (Mich.) Medical Society.—The physicians of the county have met at Big Rapids and organized this society with Dr. Joseph McNeece, Morley, as president, and Dr. Franklin C. Terrill, Big Rapids, secretary.

McLeod County (Minn.) Medical Society.—Medical men of the county met in Hutchinson, September 10, and organized a county medical society with the following temporary officers: Dr. Kee Wakefield, Hutchinson, president, and Dr. Frank E. Burch, Glencoe, secretary.

Livingston County (Mich.) Medical Society.—The physicians of the county met at Howell, September 16, and organized this society, with Dr. William J. McHench, president; Dr. Abel S. Austin, Fowlerville, vice-president; and Dr. R. H. Baird, Howell, secretary and treasurer.

New Hampshire Surgical Club.—The annual meeting of this organization was held in Centre Harbor, September 6. Dr. Arthur C. Heffenger, Portsmouth, was elected president; Dr. Charles R. Walker, Concord, vice-president, and Dr. Nelson W. McMurphy, Concord, secretary-treasurer.

Paducah (Ky.) Medical and Surgical Society.—This society had its final meeting, September 10, wound up its affairs and disbanded. As soon as this had been done the members organized the McCracken County Medical Society, which will be in affiliation with the Kentucky State Medical Society.

Central Michigan Medical Society.—This society, at its meeting, held at Lansing, September 11, voted to effect a reorganization under the name of the Ingham County Medical Society. This is in accord with plan proposed by the American Medical Association for the uniform organization of county societies.

McCracken County (Ky.) Medical Society.—The reorganization of this society was completed September 10, at its meeting in Paducah, when Dr. Shandy Z. Holland, Grahamsville, was elected president; Dr. R. Holt. Ragland, vice-president; Dr. Horace T. Rivers, Paducah, secretary, and Dr. Thomas E. Moss, Jr., Woodville, treasurer.

St. Louis Medical Society of Missouri.—A special meeting was held, September 13, at which appropriate resolutions were adopted on the death of Prof. Rudolph Virchow, who was an honorary member of the society. Short addresses were delivered by Dr. Hugo Summa, on "Virchow as a Pathologist," and by Dr. Frank J. Lutz, on "Virchow in Public Life."

Caledonia County (Vt.) Medical Society.—The physicians of the county met at St. Johnsbury, September 8, and organized a society to affiliate with the Vermont State Medical Society. Dr. Lorenzo W. Hubbard, Lyndon, was elected president; Dr. Oscar E. Carter, Danville, vice-president; Dr. Walter J. Aldrich, St. Johnsbury, secretary, and Dr. J. M. Gibson, McIndoe Falls, treasurer.

Hillsdale County (Mich.) Medical Society.—Twenty-five physicians of the county met at Hillsdale, August 28, and organized this society, which will be in affiliation with the Michigan State Medical Society. Dr. Bion Whelan, Hillsdale, was elected president; Dr. Daniel W. Fenton, Reading, vice-president; Dr. Herbert H. Frazier, Moscow, secretary, and Dr. William R. Dittmars, North Adams, treasurer.

Wyoming State Medical Society.—This society held its annual meeting at Cheyenne, September 9 and 10. The following officers were elected: President, Dr. Samuel B. Miller, Laramie; vice-presidents, Drs. John H. Conway, Cheyenne, and Mortimer Jesurun, Douglas; secretary, Dr. Harry S. Finney, Rawlins, and treasurer, Dr. Joseph L. Wicks, Evanston. Rock Springs was selected as the meeting place for 1903.

Northern Tri-State Medical Association.—The annual convention of this body was held in Coldwater, Mich., September 16. Dr. William F. Shumaker, Butler, Ind., was elected president; Dr. Howard M. Byall, Montpelier, Ohio, vice-president; Dr. John R. Williams, White Pigeon, Mich., secretary, and Dr. Arthur G. Holbrook, Coldwater, Mich., treasurer. The association will next meet at Butler, Ind., in 1903.

Oakland County (Mich.) Medical Society.—The physicians of this county met at Pontiac, September 10, and organized a county society to be in affiliation with the Michigan State Medical Society. The following officers were elected: President, Dr. Franklin B. Galbraith, Pontiac; vice-president, Dr. De Witt C. Wade, Holly, and secretary, Dr. William Mc Carroll, Pontiac. The society has an initial membership of thirty.

Oregon State Medical Society.—At the annual meeting of this society held in Portland, September 10, 11 and 12, the proposed new constitution was passed and the following officers were elected: President, Dr. Henry W. Coe, Portland; vice presidents, Drs. F. W. Van Dyke, Grant's Pass; J. A. Geisendorffer, The Dalles, and James P. Tamiesie, Hillsboro; secretary, Dr. Alexander D. Mackenzie, Portland, and treasurer, Dr. Mae H. Cardwell, Portland.

Wayne County (Mich.) Medical Society.—This society held a public memorial meeting in honor of Prof. Rudolph Virchow. After introductory remarks by the president, Dr. Samuel Bell, addresses were delivered on "Gross Pathologic Work Pertaining to Tumors," by Dr. Theodore A. McGraw; "Benefits Resulting to Science as a Result of His Microscopic Research Work," by Dr. Heneage Gibbs; "Virchow as a Teacher," by Dr. Max Ballin; "Benefits Accruing to Internal Medicine," by Dr. Johann Flinterman, and "Virchow as a Public Benefactor," by Dr. John J. Mulheron.

Conference of State and Provincial Boards of Health of North America.—The next meeting of the conference will be held at New Haven, Conn., October 28 and 29, under the presidency of Dr. Henry M. Bracken, St. Paul. The following are the topics for discussion: "Presentation of a List of Diseases which are Considered as Communicable"; "Resolutions in Regard to the Control of Yellow Fever"; "Rules Governing the Transportation of Dead Bodies"; and "An Expression of Opinion in Reference to the Action Taken by the Health Officers in San Francisco in the Sanitary Control of the Plague."

Rocky Mountain Interstate Medical Association.—At the annual meeting of this association, held in Cheyenne, Wyo., September 9 and 10, the following officers were elected: Dr. Charles H. Soller, Evanston, Wyo., president; Drs. George P. Johnston, Cheyenne, Wyo., and Uhler D. McDowell, Longmont, Colo., vice-presidents; Dr. Elias S. Wright, Salt Lake City, Utah, treasurer; Dr. Henry La Motte, Salt Lake City, Utah, recording secretary, and Dr. Samuel D. Hopkins, Denver, Colo., corresponding secretary. The 1903 meeting will be held in Salt Lake City. In his annual address, the president, Dr. R. Harvey Reed, Rock Springs, Wyo., strongly advocated the establishment of an interstate board of medical examiners under national supervision, there being a board in each state appointed by the national government. This would entitle a physician practicing in one state to practice in all others where at present he must pass an examination in moving to a new state.

SECOND INTERNATIONAL CONFERENCE FOR THE PREVENTION OF SYPHILIS AND VENEREAL DISEASES.

Held at Brussels, Belgium, Sept. 1 to 6, 1902.

(From Our Special European Correspondent.)

Importance of Subject.

Without doubt one of the widest and most important subjects in the entire domain of medicine is that of the venereal diseases. Bound up in their study purely as topics of medical interest, there are many unknown and questionable problems, but when viewed in the larger social sense the complexity of their study becomes almost appalling. It is peculiarly fitting, therefore, that an international society should have been formed, and it is further a subject of great congratulation that it has had so propitious a beginning under the most generous and appreciative support of the Belgian government.

Delegates.

The representatives were gathered from all the countries of the civilized world, and the United States government was most ably represented by Drs. Valery Havard, U. S. Army, and Ezra Z. Derr, U. S. Navy. Among the members of the profession from this country were Drs. John Van der Poel, Ferdinand C. Valentine and Smith Ely Jelliffe, delegate from the American Medical Association, all of New York City. The medical profession were in the majority, but jurists, legislators, editors and delegates from benevolent and charitable societies, representatives of the police, etc., all contributed to give not only a distinctly cosmopolitan character to the gathering, but also gave the discussions a fulness and many-sidedness rarely found in such congresses. This tended to render the work of this conference less clear cut and decided than many of the members desired, but it had the advantage of showing the many-sided character of the questions under discussion and the desirability of making true progress.

The Work of the First Congress.

In the first congress, held three years before in Brussels, many preliminary subjects were discussed and settled to the satisfaction of all the members. These included the determination by:

1. General reports by leading specialists of the dangers to society of (*a*) syphilis; (*b*) gonorrhea; (*c*) the part that prostitution plays in the propagation of these maladies; (*d*) modes of dissemination other than prostitution.

2. To ascertain by joint study the condition of prostitution; the degree of frequency of venereal disease; the prophylactic measures taken to diminish these affections; the laws concerning prostitution, state, municipal, preventative or repressive; the police or medical supervision; opportunity for treatment in hospitals, and medical instruction concerning venereal maladies.

3. To consider six definite question: (*a*) *Have those systems* of official regulation which have been in vogue had an appreciable influence in the diminishing of venereal diseases? (*b*) How can the medical supervision of prostitution be made more effective? (*c*) From a purely medical viewpoint would it be of advantage to tolerate houses of prostitution or should these be suppressed? (*d*) In what manners can police regulation of prostitution be improved? (*e*). By what legal means might the number of women who try to make a living by prostitution be diminished? (*f*) What general measures can be taken to combat the spread of syphilis and venereal disease apart from those concerning the prostitute?

In the discussions held in 1899, it was shown that only by an international conference could any advance be made, and a large number of dependent issues were definitely settled. The larger questions of ways and means to be adopted effectively to combat the diseases were left, however, in as unsettled a manner as ever. Among the conclusions reached by the first conference may be mentioned the following: That municipal control of prostitution as practiced has not been a success; that the prostitution of minors, of all the forms of prostitution, is the most dangerous, both as moral and medical factors; that present modes of instruction in venereal diseases, both for the student of medicine and for the laity, are in part insufficient, unthorough and unpractical and that the statistical studies bearing on venereal diseases need to be established on more uniform lines if valuable comparisons are to be deduced therefrom.

Scope of Work.

Narrowing the field down as did the discussions of the first conference, the program of the second international meeting *specially took up three main questions.* The discussions were most active concerning that of public prophylaxis; the other questions, individual prophylaxis and statistics, were relegated to a subordinate position. The program outlined the following scheme:

Public Prophylaxis.

In that it has been a recognized function of the state to protect its citizens from the ravages of contagious diseases which by their frequency, or by the ease with which they are communicated, constitute a public danger, and further, to protect minors abandoned by their families:

A. What legislative action should be taken against venereal diseases, especially concerning 1, prostitution, (*a*) of minors; (*b*) maintenance of public peace and morality: (*c*) procurers and procuresses. 2. Apart from prostitution, (*a*) for the protection of minors of both sexes; (*b*) for the organization of free medical treatment in hospitals and by private charities; (*c*) for the control of wet nurses, of infection by midwives and nurses, of infection by arm-to-arm vaccination, of industrial infections; for the protection of servants in employment bureaus, lodging houses and hotels.

B. Should the transmission of venereal diseases be made a penal offense?

Individual Prophylaxis.

If it be the state's function to protect society it is a still greater duty of the individual to care for himself and to protect others, by avoiding all contact with a diseased person; even more careful should he be, if infected himself, to do everything in his power to prevent the infection of others. Therefore, by what means can the personal and social dangers of syphilis and gonorrhea be made known to the youth of the country at large and in what manner can gratuitous medical treatment further individual prophylaxis?

From a general standpoint there seems to be little doubt that if concrete suggestions could result from this most excellent program, the questions of sanitary and moral prophylaxis against syphilis and venereal diseases would be most satisfactorily answered.

Opening of Conference.

The second conference opened September 1, the Belgian State Minister of Hygiene, Baron von Brüggen officiating. M. Jules le Jeune, state secretary of Belgium, was re-elected president. Dr. Dubois Havenith of Brussels, to whose energy the success of the permanent organization of the Congress is largely due, gave a short address of welcome and read letters of regret from Drs. Fournier, Finger and Berenger.

Legal Regulation of Prostitution.

This was the first general discussion of the opening session. Inasmuch as the method of conducting a meeting of this kind differs so materially from similar meetings in the United States, a few words of explanation may be offered. For the most part, the papers presented by the members had been printed and were obtainable by the members of the Congress. Five or ten minutes were then allowed each member to defend his views or present his conclusions should he not have prepared a paper. This method does not permit of a clear-cut report and hence only those conclusions will be here presented which seem to the reporter of service to American readers.

There were two sets of partisans at the Congress, the one party termed the *reglementarists,* consisting of those who maintain that police or medical supervision and legal control are necessary for the suppression or diminution of venereal diseases, and the *abolitionists,* who hold that all legal recognition of prostitution is subversive of moral ends and tends to encourage prostitution; hence they claim that educational and moral factors are the most important features, and in the extreme wing of the abolition party, many English partisans go so far as to maintain that the suppression of prostitution is the only rational measure. As with the first congress it could be said that the bridging over the chasm between the two parties was not accomplished, but both reglementarists and abolitionists were apparently drawn closer together by reason of the discussions, one to insist more strongly on the advantages of education and moral factors and less on police autocracy; the other, to recognize that for certain conditions and in certain places and under certain circumstances, sanitary policing was necessary from the hygienic standpoint. Some of the conclusions of the individual speakers are given as indicating their authoritative position and their experiences.

DR. C. BOECK, professor of dermatology in the University of Christiania, spoke of the Norwegian system. There every village and town has a committee of morals, as it were, whose work is to provide instruction in matters pertaining to sexual morality and to venereal diseases. This instruction is molded to the conditions of each community. Further, every physician of Norway is compelled to report all cases of venereal diseases coming under his treatment.

DR. SANTOLIQUIDO, inspector of public health of Rome, is an ardent advocate of the abolitionist doctrine. He said that the Roman system of complete freedom of all supervision of prostitution combined with gratuitous dispensary treatment had proven satisfactory. There was, moreover, in Rome extended school instruction in elementary hygiene bearing on sexual matters.

Dr. T. BARTHELEMY, physician to St. Lazare, the prison hospital for Parisian prostitutes, spoke of the conflict of the laws of nature in the individual, and the laws of the collective body—society. The existence of venereal diseases was one of the great complicating factors of social development. Society, he said, quoting from Fournier, had at least three methods of conservation as regards the destructive agency, venereal diseases, moral means, medical measures and legal regulations. The following out of any one set of factors, he said, would not result in the ultimate good. Moral means, in their way, were good for those who could be so controlled; medical research was daily increasing the efficiency of the physician to combat the ravages of the contagious diseases, and administrative measures were absolutely requisite to complete society's defense against a disorganizing element, like venereal disease.

Because the present system of regulation in France has proven unsatisfactory, it is false to argue that the system is bad; it is rather the inefficient and half-hearted application of the system which permits of the lack of conclusive results. One class of individuals in particular, he believes, should be ruled with an iron hand, namely, the professional prostitutes, who, knowing they are diseased, nevertheless go about spreading infections. The members of this class, known almost to a person by the police, should be compelled to undergo treatment in closed hospitals until they are free from active infections.

DRS. DRYSDALE, London, and G. DEMETRIATADE, Bucharest, and MR. YVES GUYOT of Paris, editor of the *Siecle,* spoke of many of the practical difficulties of state control and argued that measures of education were more efficient in the end.

Control of Wet Nurses.

This aspect of public prophylaxis was very adequately discussed. Many believed that was a matter that could be brought under the control of the law.

DR. PETRINI, Galatz, professor in the University of Bucharest, prepared an elaborate report in which the prevalence of infection of syphilis by means of wet nurses was demonstrated. He showed that its frequency varied widely in different countries and hence an English view, for instance, of its comparative unimportance, drawn from the rarity of the infection in that country, was not a criterion for the whole, since it had been shown for Oriental lands and even for Paris, that it was an important element. He proposes a special medical service, working in co-operation with municipal authorities and having for its head a competent syphilographer. All children being nursed by wet nurses should be inspected regularly by representatives of this bureau and all wet nurses should receive authorization for their calling by the same bureau after rigorous medical inspection. Special provision should be made for syphilitic children.

General Regulation Measures.

One of the ablest reports presented to the Congress was that of PROFESSOR NEISSER, chief of the Breslau Clinic. His conclusions may be given in full, as they summarize the argument of the thorough-going reglementarist, of which party Neisser is perhaps the most widely-known exponent.

He concluded his communication by moving that: The Second International Congress for the Prophylaxis of Syphilis and Venereal Diseases is in favor of the following proposals, which shall be forwarded to the different governments:

I.—In the efforts which are taken to prevent the spread of venereal disease, the state should not rest contented with adopting measures for the restriction of prostitution, but should also take advantage of the many opportunities which are offered for contending against the spreading of venereal diseases.

II.—The most important and the most efficient means of preventing the diffusion of venereal disease is by familiarizing the public with the dangers and the importance of these maladies. Above all, young men should be instructed that not only is chastity and continence not detrimental, but that these attributes are desirable from the medical point of view.

III.—All measures adopted by the authorities with the object of preventing venereal disease and of contending with the melancholy consequences of prostitution should be sanctioned by law. The principles of these laws should be as follows: The administration of the law should be relegated to the parochial or municipal authorities of each district.

IV.—*A.* The law should guarantee to everyone suffering from venereal disease gratuitous hospital treatment. and should in no case demand from parents, from tutors or from fellow citizens of the patient any reimbursement for the expense of hospital treatment.

The state should defray the expenses of this gratuitous treatment, except where charitable societies exist for paying the expenses of such illness.

B. In every town, important community or district, hospitals should be erected—ultimately supported by state aid—where the gratuitous treatment of venereal disease and dispensing of medicine should be carried out.

C. Care must be taken that all arrangements prejudicial to the treatment of venereal disease at hospitals should be abolished. It is better to place these cases under the department of dermatosyphilography in general hospitals than to establish special hospitals; the nature of the disease should not be revealed to other patients, and the feelings of the sufferers should be respected.

V.—The following special measures should be adopted:

A. A Sanitary Commission should be appointed which should be the central administrative machine which should take all the necessary steps to ensure the treatment of venereal patients and the prophylaxis of those diseases.

B. Compulsory medical notification should be introduced in a two-fold form:

1. As regards the Sanitary Commission: (*a*) The composition of this commission. Like a legal tribunal, it should consist of judges and jurors. These should be selected mainly from those whose studies and professional and administrative capacity give them a special insight into the subject of venereal disease and of prostitution—doctors, clergymen and public officials.

(*b*) The programme of this commission: Statistics should be kept of all the patients who are notified (by name or otherwise). A sanitary supervision should be exercised over all the subjects of venereal disease who are notified by the doctors or the police as being dangerous to the public health.

This supervision should be carried out in the following manner:

1. The gravity of venereal disease and the necessity of continence should be impressed upon the patient, and in the event of the instructions being disregarded, the police should make a legal complaint.

2. The patients should be subjected to medical treatment, and when they are so subjected, they should either consult at their own expense a doctor nominated by the commission, or should be treated gratuitously at some public institution set on foot for the purpose.

At the same time a card should be given to those individuals brought up before the Sanitary Commission, which should make it certain that the patient was submitting himself with regularity to the treatment ordained.

3. The police should be informed of those patients who neglected to follow out the treatment prescribed, in which case a judicial complaint should be lodged against the offender for his neglect. Sanitary supervision should be kept absolutely separate from police supervision, and the *"police des mœurs"* should be abolished.

The compulsory medical notification should be made under a double form:

1. Without any indication of name, but in a manner sufficiently clear so as to avoid notifying the same patient twice. The doctors should declare to the commission, under this form, all the cases of venereal disease under their care. They should indicate: *a.* The Christian name, the initial of the name, the month and year of birth; *b.* The exact diagnosis; *c.* The date of infection, and *d.* The source of the infection.

This declaration is most important, since it will determine the amount of venereal disease existing. Ultimately this compulsory declaration might be replaced by a legal exactment which should compel the doctors to render a statement at certain intervals. The indication of the source of infection would render it possible to discover clandestine prostitutes, and also those men who have sexual intercourse despite their disease. One condition should be attached to this regulation; the patient must be given a guarantee that the person he denounces as having been the source of his infection should not be punished or rendered liable to damages.

2. The doctor shall indicate the name of the patient, when he has reason to think that the latter is continuing to have sexual intercourse, and is not observing the sanitary measures recommended him. The police should also have the right to signify to the commission those persons suspected of prostitution, but the commission alone can decide on the measures to be taken in respect of such persons.

C. A law should be passed forbidding anyone not in possession of a medical qualification from treating cases of venereal disease, under a severe penalty. Those persons, knowing themselves to be suffering from venereal disease and who continue to have sexual intercourse commit an offense even if contagion does not result.

VI.—It is necessary to give every medical man in his educational career adequate instruction in venereal diseases, and possibly a new diploma might be instituted for those who wish to specialize in the subject.

VII.—Prostitution in itself should not be considered as a misdemeanor; it should only be punished where the state or society are injured through the misconduct of the prostitute.

VIII.—The state has the right to deal with existing prostitution by measures specially directed against the dangers caused thereby; further, it has a duty to perform in preventing the spread of prostitution by reforms adopted for the protection of the community.

IX.—When anyone (man or woman) is repeatedly warned of the necessity of obeying the regulations indispensable from the sanitary point of view, if such person constantly disregards such warnings, or if a professional prostitute continually neglects to conform to regulations, if she causes a scandal in the street or if she provokes a disturbance, they should, on the complaint of the police, be condemned to detention of long duration, and in the event of the continuance of their misconduct should be placed under the supervision of the police. The system of short detention should be abandoned.

Prostitutes of incorrigibly bad character, who continue to practice their avocation in spite of their incurable condition, should be confined either permanently or for a definite period in asylums or houses of correction.

X.—Prostitutes placed under the supervision of the police should be subservient to the instructions of that body as regards their domicile and the practice of their profession. The sanitary supervision of these women should be entrusted to the Sanitary Commission.

(*a*) The practice of prostitution should be prohibited in houses where children are living, or where any other lodger raises an objection, and the landlords are responsible for the enforcement of this regulation.

(*b*) In order to render the practice of prostitution possible, while at the same time depriving it as far as possible of its publicity, certain houses of resort should be sanctioned.

(*c*) The supervision of the streets, a matter which is left to the police, should aim at restricting the public practice of prostitution.

Minors who are prostitutes, or are suspected of prostitution, or who are the subjects of disease should not be left to their own devices; they should be admonished but not punished; some law analogous to the Prussian law of July 2, 1900, should be adopted to ensure their compulsory education (girls so diseased should be submitted at the same time to treatment and to education, which treatment could be renewed either in hospital or outside).

Compulsory education of children who run the risk of moral degradation should be enforced (see Prussian law, July 2, 1900).

Besides these measures other steps should be taken for the prevention of prostitution:

1. Those minors who are placed under restriction should be detained in special educational establishments, and not in prisons or houses of correction.

2. The evils resulting from the overcrowding of rooms where children sleep should be mitigated.

3. Children from 14 to 18 years of age should be subjected to the same educational course as adults.

But if for some reason compulsory education can not be enforced, or if a young prostitute defies all efforts for the amelioration of her position, she should be treated in the same way as the older prostitute. There is no necessity for any difference in her treatment, considering that she is pursuing a course dangerous to the public safety and welfare; for young prostitutes are the most dangerous from the sanitary point of view.

Public Prophylaxis.

The entire second day was devoted to the discussion of public prophylaxis. Little that was new was contributed, but the opinions began to obtain a more concrete expression and the enthusiasm of the gathering was often awakened by a brilliant presentation of views.

Protection of Minors.

This subject was taken up with much enthusiasm as there was practical unanimity as to the great crime of prostitution in minors, as well as the general belief that of all forms of prostitution it was the most dangerous, both morally and hygienically.

Dr. Good, Paris, speaking on this subject in conjunction with other matters, said that prostitution by minors should not be countenanced by law. As for an age limit, it might have to be made different for various countries. Eighteen was a good average. In case a minor persisted in pursuing a course of prostitution she should be taken care of in a special establishment, where she would be confined until she reached her majority. He was opposed to houses of tolerance. In certain instances where these could not be suppressed, he suggested a number of features, particularly concerning responsibility of the keeper of the house, the character of clothing, etc. The selling of liquors should be prohibited in all such places.

Dr. L. Pileur, Paris, and **Mrs. Sheldon Amos**, London, insisted on the protection of minors who might be forced into prostitution.

Dr. F. Vechere, surgeon to St. Lazare, Paris, spoke of the great dangers and the corrupting influences of the "free sidewalks." From the medical point of view, the street walkers often represent those most diseased and usually too ignorant to know it and who, therefore, rarely seek medical advice. The condition of the streets of London, he thought, were a disgrace to a civilized community, and such exhibitions of the flagrant traffic in prostitution had a much more degrading effect on the moral youth than the legalizing of prostitution might have on an already corrupt individual who had made up her mind to follow the trade whether it was legal or not. He was inclined to be pessimistic regarding the moral reform of the major portion of prostitutes, but this was no argument against his most thorough belief in the use of all educational measures. From a reglementarian standpoint he would make two classes of prostitutes: For those who of their own will came for medical treatment he would have free dispensaries and afford them every opportunity to get well, permitting perfect liberty, while for the prostitute who refused to be treated and yet pursued her calling, he advocated forcible detention in closed hospitals until their malady was rendered non-communicable.

Dr. Blaschko spoke of the dangers of autocratic regulation of prostitution if the ordinary police were permitted to assume control. Reglementation as carried out, he thought, showed more failures than successes.

Dr. O. Lassar, Berlin, spoke of two classes of prostitutes: The one, who by reason of misery and bad economic conditions was driven to resort to it to keep herself alive, and another class that voluntarily took up the life. Those of the former class should be helped to regain their position in life by philanthropy of the most helpful character. Prostitutes of the other class should be tolerated and afforded an opportunity to pursue their avocation in such manners and in such places as would permit of the applications of principles of responsibility.

Dr. Gaston, chief of clinic at St. Louis, Paris, and **Mrs. Bieber-Bohm** of Berlin, president of the Society for Jugendschutz, spoke on the subject of the protection of minors. Greater stringency in the matter of seduction was suggested, and larger philanthropy to help the seduced to regain a foothold in society. Better dwellings and better educational facilities were desirable.

Regulation Inefficient.

Dr. Landouzy, professor of the Faculty of Medicine of Paris, said that the present state of affairs was bad without a doubt. The state should be held responsible for the health of its citizens, but the methods of regulation at present in vogue, in France at least, were unsatisfactory. Such regulation took cognizance only of registered prostitutes and of only a small portion of these. Apart from the large question of morality the State should recognize only the fact of contamination and of prophylaxis, and should regulate the venereal diseases much as other contagious maladies, such as tuberculosis, typhoid, etc., are regulated. He further advocated the framing of laws which would make the communication of venereal disease a civil offense. This matter of civil damages is discussed at length in the report of the fourth day.

(To be continued.)

CANADIAN MEDICAL ASSOCIATION.

Thirty-fifth Annual Meeting, held in Montreal, Sept. 16 to 18, 1902.

The President, Dr. Francis J. Shepherd, in the Chair.

This meeting was unusually well attended. Resolutions of regret at the death of Virchow were passed. After the business session of the first morning the association divided into the medical and surgical sections.

Tuberculosis.

Dr. H. A. Lafleur, Montreal, presented a man in middle life who had splenic anemia.

Dr. J. H. Elliott, of the Gravenhurst Sanitarium, contributed a paper on "Some Further Results in the Treatment of Tuberculosis."

Five years' experience with 555 cases has shown that almost all of the patients discharged "apparently cured" remain perfectly well; of those with "disease arrested" many have progressed to good health at home by following the rules of life learned at the sanitarium, renewed activity of the disease, when occurring, having been as a rule due to unfavorable surroundings, or the necessity of again taking up unsuitable work.

Not the least important part of the work of a sanitarium is its educative influence. Each patient who returns home is a teacher of the value and importance of a hygienic life, to those who wish to retain their health, as well as those who are not strong. Experience is demonstrating the immense amount of influence for good which results from a properly equipped and conducted sanitarium. It is unfortunate that there are not more of them. It is hoped that the attention of our philanthropists will be drawn to the crying need of such institutions, and that ere long we shall have a number of them in the various provinces of Canada.

Dr. Osler congratulated Dr. Elliott on the promising results which he has obtained. Two important points should be kept well in mind: First, early diagnosis, and second, getting patient as soon as possible under proper professional control.

Dr. McPhedran, Toronto, emphasized training patients how to care for themselves at home. He believes that the neighborhoods of sanitaria are always areas where tuberculosis is always diminishing.

Dr. John Hunter, Toronto, read a paper on "Pleurisy as Associated with Tuberculosis." At least two-thirds of tubercular pleurisy cases are curable. The rapidity of the filling of the pleural cavity is especially characteristic of tubercular cases. As to treatment, during convalescence, deep breathing should be practiced very assiduously, and inflation with rubber bags is a valuable exercise. Then change to a suitable climate should be insisted on if the progress towards recovery be retarded.

Clinical Notes on Blood Pressure in Disease.

Dr. A. E. Orr, Montreal, showed Gaertner's tonometer and the manner of its use. Four hundred patients at the Royal Victoria Hospital, Montreal, were experimented on. The normal pressure was found to be 110 to 120. Seventy cases of typhoid fever were recorded in different stages, showing an average blood pressure of 104.5 mm. It was highest, but still subnormal, in the first week. There was only one death, which took place in a man of 35 years, when pressure was 105 on the tenth day, 110 on the twenty-first day; then three hemorrhages, and on the twenty-fourth day a fatal hemorrhage.

A large proportion of these had cold baths or cold sponging. Nineteen cases of chronic nephritis were recorded. Of this group the highest was 260; average 208.5. Of acute nephritis there were seven cases; only three of these showed high pressure. Of arteriosclerosis 27 cases were recorded; highest 110, 16 being 150 and over; 4 from 130 to 145; 3 from 110 to 125; 4 subnormal. The highest was in a man of 72; glycosuria, no albumin.

Valvular diseases of heart, 48 cases, including 11 cases of mitral regurgitation. In mitral stenosis 8 cases were recorded, 6 being normal. Mitral stenosis with mitral regurgitation, 14 cases. Eleven had practically normal tension. Aortic insufficiency, 3 cases. Myocarditis, 4 cases; one man, aged 60, having pressure of 80. Hypertrophy and dilatation of heart of unknown causation, 2 cases 120 and 110, respectively. There were 18 cases with acute lobar pneumonia, with an average for the series of 92.7; only one death. Pleurisy 16 cases. Neurasthenia 18 cases, 13 having normal pressure; 3 from 135 to 140; one of 160. In malignant disease, cancer of viscera, there were no high readings. Anemia 6 cases, all being normal. Addison's disease, both in early stage; both normal. Puerpera hemorrhagica, one case; normal. Puerperal septicemia, one prolonged case, ending in recovery, had extremely low blood count—930,000; above normal. One gall-bladder case with suppuration—a blood pressure of only 50 ten days before death.

One lead poisoning; 3 of jaundice; 1 of tubercular meningitis,; 2 of diabetes; 2 of exophthalmic goiter; 8 of acute articular rheumatism, heart not affected; chronic articular rheumatism, 4 cases, all normal; gonorrheal rheumatism, 8 cases, 6 normal; rheumatoid arthritis, 16 cases, 6 normal; gout, 4 cases.

There was 1 case of hemiplegia and 14 of tabes dorsalis, 11 normal pressure; cerebral tumor, 8 cases; general paralysis of insane, 1 case; Friedrich's ataxia, 1 with albuminuria, 140; 1 acute ascending paralysis, 140; 2 cases tic douloureux, one 130 during the attack. There was one case of epidemic influenza and 36 miscellaneous cases.

In discussing this paper Dr. Osler considered it to be the best contributed article on the subject.

Telephonic Properties of the Paralyzed Bowel.

Dr. Geo. A. Peters, Toronto, read a paper on "The Telephonic Properties of the Inflamed Abdomen; a Sign not Hitherto Described, Due to Paralysis of the Bowel in Peritonitis." In auscultating the abdomen with a view to ascertaining whether there was paralysis of the bowel in cases of appendicitis, typhoid perforations, traumatism, and other conditions which stand in a causative relation to peritonitis, Dr. Peters has observed that where the gurgling sounds due to the passage of gas and liquid in the bowel are absent from paralysis, the heart sounds are invariably very plainly present over the whole abdomen. In intense cases, particularly in children, both inspiratory and expiratory breath sounds may be heard. Dr. Peters' explanation of the phenomena is: unlike the healthy bowel—where the gas is retained in certain well-defined and circumscribed compartments, each constituting a complete retainer in itself, with vital walls possessing a muscular tonicity under nervous control—the paralyzed bowel, by reason of its flaccid and atonic condition, permits an entire change in the disposition of the contained gas; the entire distended abdomen becomes, practically and acoustically considered, a continuous column of air or gas, of the precise principle of the stethoscope. The effect of this is further heightened by the rigid abdominal wall, which acts as a sounding board. The prognostic significance would seem to indicate an unfavorable termination in those cases where the sign is very well marked in cases of septic origin.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-Second Annual Meeting, held at Allentown, Sept. 16 to 18, 1902.

The President, Dr. F. P. Ball, Lock Haven, in the Chair.

Dr. E. H. Dickenshied, president of the Lehigh County Medical Society, and Hon. F. E. Lewis, mayor of Allentown, made addresses of welcome.

Reports of Secretary and Treasurer.

Dr. C. L. Stevens, secretary, reported that the fifty-four affiliated county societies were, with a few exceptions, in a healthy condition, the present membership being 3518, a net gain of 118 since the last annual meeting. The actual membership numbers more than the number stated since a few societies had made no report since March. If the proposed plan for district meetings were adopted by the society and seconded by the county societies it was hoped that many would be added to the present membership.

Dr. George B. Dunmire reported a satisfactory balance in the treasury. One county was reported for non-payment of dues.

Report of Committee Appointed to Examine School Text-Books on Anatomy, Physiology and Hygiene.

Dr. L. J. Lautenbach reported that the committee had obtained about fifty works on this subject, the majority of which were inaccurate and full of exaggerations, especially on the subject of alcohol and tobacco. It was recommended that the supervision of text-books on these subjects be intrusted to medical men rather than to the laity. The appointment of a committee was suggested to procure an amendment of the Pennsylvania Temperance Education Law so that pupils might study the subjects of anatomy, physiology and hygiene from text-books meeting the requirements indicated. The report was accepted and the committee continued.

Report of the State Board of Medical Examiners.

Dr. Henry Beates, Jr., reported that the board had held two examinations since the last meeting of the Society, as follows:

December, 1901.

College.	No. Examined.	Passed.	Failed.	Gen. Aver'ge.
University of Pennsylvania	14	14	..	82.78
Jefferson Medical College	15	13	2	80.21
Medico-Chirurgical College	15	11	4	76.39
Woman's Medical College	..	..	..	.....
Western University of Pennsylvania	19	14	5	76.25

June 1902.

College.	No. Examined.	Passed.	Failed.	Gen. Aver'ge.
University of Pennsylvania	89	87	2	84.54
Jefferson Medical College	86	83	3	82.47
Medico-Chirurgical College	76	68	8	80.45
Woman's Medical College	19	19	..	82.91
Western University of Pennsylvania	59	49	10	79.31

Advance in standard was announced both as to preliminary qualifications required for matriculation and of medical education by all of the medical colleges of Pennsylvania. It was regretted that the state, as a whole, was not on the higher plane occupied by New York, followed by Ohio and Minnesota, and to be followed by Illinois in 1903. The hope was expressed that the influence and co-operation of the Medical Society of the State of Pennsylvania would aid in placing the standard of requirements by medical colleges of Pennsylvania second to none.

Miscellaneous Business.

After considerable discussion the report of the committee to suggest changes to the by-laws was adopted as a whole, with the exception that the time of meeting be changed from the third week in September to the fourth, unless it is otherwise changed by vote of the executive council.

The assessment for the previous year beginning with July last was fixed at $1.50 per capita.

The appropriation of $2000 to the Rush Monument Fund placed in the control of the board of trustees remains at 4 per cent. interest, amounting in July last to $179.25. In the matter of recommending the publication of a directory of the physicians of the state by the society the board wished to report progress.

Dr. Samuel Wolfe, Philadelphia, offered a resolution that the society endorse the report of the committee on school text-books, and that the committee be given full power to use all proper means to have the school books revised so as to conform to the suggestions indicated in their report, and should they deem it necessary, present to the next Legislature such amendments to the Act of the Legislature of April 2, 1885, "Relating to the Study of Physiology and Hygiene in the Public Schools of the Commonwealth and Educational Institutions receiving Aid from the Commonwealth," as will bring about the desired result. On motion, the resolution was referred to a committee appointed by the president, as follows: Drs. William T. Bishop, S. M. Woodburn, and S. P. Heilman.

Dr. Cornelius Shepherd, delegate from the Medical Society of New Jersey, was introduced to the society. He spoke in favor of medical reciprocity on a proper basis. He maintained that every member of the medical profession, after properly qualifying himself, should connect himself with his district society, become a member of his state society and then of the American Medical Association. When thus organized the medical profession would have effective influence in the enacting of laws for the good of the community.

Resistance of the Eye to Injury.

The scientific papers and discussions were led by "The Ability of the Eye to Withstand Effects of Injury and Diseases." Dr. P. J. Kress, Allentown, in this paper referred to the elaborate system of Nature in the intercommunicating vessels for nourishment and drainage of the eye. The formation of the eye during embryonic state has a vast influence on its future ability to resist disease and injury, and since degeneracy weakens the power of resistance, heredity is of vast importance. Syphilis and tuberculosis manifest themselves in corneal involvement and in a weakened power of the coats of the eyeball. It was pointed out that toxic elements produced from diseases of the liver and kidneys cause degenerative changes in the eye with hemorrhages, atrophy and paralysis. Absorption of ptomains from gastric disturbances and badly-digested food cause eye lesions. Other dangers to the eye were pointed out, from adulteration of articles of consumption. poisoning by inhalation of fumes while working in the arts, and also from disturbance of the nervous system.

Orbital Cellulitis After Bowman's Operation with Use of Leaden Style.

Dr. Walter B. Weidler, Lancaster, reported this case because he had not been able to find any record of such a case. Fuchs states that orbital cellulitis is possible from the rupture of the lachrymal sac posteriorly, but he further states that this is very rare indeed. Bull of New York, in Norris and Oliver's "System of Diseases of the Eye," divides the causes into two classes: (1) Idiopathic, and (2) traumatic. The patient gave a history of epiphora O. S. for the past five years; had been Bowmanized three years before. Recurrence took place at this time with the same condition O. D. The treatment is given in detail. Though there was gradual subsidence of the cellulitis there was no recovery of vision. Dr. Weidler also reported the case of a woman, aged 41, of good family history, with complete bitemporal hemianopia. Diagnosis was made of chiasma.

(To be continued.)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Fourteenth Annual Meeting, held in Washington, D. C., September 16 to 18, 1902.

The President, Dr. Edwin Ricketts, Cincinnati, in the Chair.

Welcome.

An address of welcome was delivered by Surgeon-General Geo. M. Sternberg, U. S. Army (retired), Washington, which was responded to by the president.

Pelvic Diseases in the Young and Unmarried.

Dr. C. L. Bonifield, Cincinnati, in his paper dealt only with gynecological diseases which occurred in women not subjected to sexual intercourse. Physicians were now more frequently consulted about such troubles than formerly, but this was probably because the modern woman bore discomfort less well than her ancestors did, rather than that there was an increase in the number of patients suffering from such disorders. Disorders of menstruation, undeveloped uterus, tubercular disease of the appendages, and acute displacements were the most common pelvic affections in such patients. When menstruation did not make its appearance at the expected age a thorough investigation of the general condition of the patient was indicated, and her health should be made as nearly perfect as possible. A local examination was not required unless there were severe local symptoms. The same was true of amenorrhea occurring after menstruation had been established. The possibility of pregnancy should always be borne in mind. Dysmenorrhea might be of constitutional or local origin. Local treatment was not required in the first variety, and the endometritis which caused a majority of the latter cases could often be relieved by hygienic and medicinal treatment. Menorrhagia was often caused by a depraved state of the blood, or an interference with its circulation by disease of the heart, liver, or kidneys. The uterus, whose development had been arrested at the time of puberty, was the most important type. It was generally sharply anteflexed, but occasionally retroflexed, the cervix was long and narrow and the body dilated. Dysmenorrhea was a prominent symptom. Thorough dilatation, curettage and tight packing, repeated one or more times, if necessary, constituted the best treatment. Tuberculosis of the pelvic peritoneum was often mistaken for typhoid fever or appendicitis. When tubercular peritonitis began in the uterine appendages they should be removed by abdominal section. Acute prolapse or retroversion of the uterus was found as a result of a fall or heavy lifting in young women of lax fiber. Young unmarried women are best examined under anesthesia, and when possible the treatment of their local disease should be operative.

Removal of the Gall-Bladder Through the Lumbar Incision.

Dr. Walter P. Manton, Detroit, reported a case of removal of the gall-bladder through the lumbar incision. The patient, aged 38, the mother of five children, with two abortions, had never been robust, but was able to attend to her domestic duties. She had suffered from a number of gastric attacks, but there had been an entire absence of symptoms pointing to disease of the biliary tract. Examination showed the left kidney to be loose, while the right kidney appeared to be double its normal size, displaced downward and inward, and with certain projections which led to the diagnosis of nephroptosis, with probably cystic metamorphosis. At the operation, through the nephropexy incision, the fatty capsule of the kidney was found to be imbedded in a mass of adhesions which had given rise to the appearance of the enlargement. Below the kidney pouch a distended gall-bladder containing fluid and nineteen gallstones the size of hazel-nuts was found, surrounded by adhesions. This was enucleated, tied off at the cystic duct, and removed. The fluid contents of the sac contained a bacillus having the morphology and staining qualities of the colon bacillus, and a long, large rod which stained violet by Gram's method, but no staphylococci or streptococci. The kidney capsule was split and peeled off to the lateral line, fixation sutures introduced, and the organ returned to its place. A strip of gauze for drainage was carried from the upper angle of the external wound to the stump of the cystic duct. The patient made a good recovery. It was impossible to state whether the condition was a congenital anomaly or the result of the walling-off of the gall-bladder by adhesions. The operation was entirely extraperitoneal. This was the first recorded instance of extirpation of the gall-bladder through the lumbar incision. The operator believed that on account of the anatomical position of the gall-bladder in uncomplicated disorders of the biliary tract, the anterior abdominal incision was the one of choice, but that when nephroptosis or a morbid condition of the kidney existed demanding operative treatment, together with enlargement of the gall-bladder from stones or fluid accumulation, the lumbar route offered certain advantages. He paid tribute to Edebohls as the pioneer who had opened up this previously uncultivated field of surgery.

Drainage in Abdominal and Pelvic Surgery.

Dr. Joseph Price, Philadelphia, stated that the more progressive and successful specialist doing painstaking operations in every detail, where filth and complications, or adhesions, were found to exist, practiced most extensive sponge packing or drainage. The modern operator did the same by his gauze pack or the dry operation. A number of operators doing fairly good work by the suprapubic route condemned or partially rejected drainage. He said some of them never learned and never would learn how to handle drainage well. After abandoning the suprapubic route, these men were placed in the uncomfortable position of admitting that drainage did what they had refused to do by suprapubic surgery. Nothing had pleased the speaker more in the last few years than the knowledge of the fact that the young school of surgeons used drainage with great success and skill in spite of the fact that these young men had been under the instruction of the men about the country and in the hospitals who condemned it. Almost all the secondary operations were coming from operators who opposed drainage or practiced it only when they were compelled to do so, and he thought it was curious that these men favored drainage when they abandoned procedures or practiced incomplete ones.

The Vaginal Route for Operations on the Uterus and Appendages.

Dr. Joseph H. Branham, Baltimore, stated that the most common condition threatening the life of gynecological patients, caused by gonorrhea, abortion, tuberculosis and other conditions not always discernible, and often requiring prompt action to save life, was pelvic inflammation. Here the vaginal method of treatment made its best showing. He had operated on more than one hundred cases by this method, with but three deaths. He concludes that vaginal drainage is the natural method. It is far more effective and safer. Extensive pelvic inflammation, associated with pus formation, rapidly wall off the general peritoneum. This wall should not be broken through and can not be interfered with without danger of general peritonitis. Opening through the vagina was associated with a minimum amount of shock and hemorrhage, and was thus indicated in extreme cases associated with severe toxic symptoms.

Ice Following Abdominal Section.

Dr. Frank F. Simpson, Pittsburg, Pa., advocated the local use of ice for the relief of pain, to prevent or control peritonitis, and to limit the morbid products following operation. These sequelæ were due almost wholly to inflammation, which was very slight and purely traumatic, in the vast majority of cases, but might be bacterial in a very few others, and in unclean cases. This use of ice he began after observing its effects in several hundred cases of pelvic peritonitis of all grades prior to operation. In this connection he said: "After having seen many grave cases of this kind yield so favorably to this measure, and having seen a few of them die later from peritonitis following an abdominal section, which removed the great bulk of filth, leaving but little behind in a fairly clean cavity, it seemed to me that with the same infecting organisms active in large numbers before operation, and in small numbers after operation, we might expect like results if the same treatment were employed in the two classes of cases. And further, that by beginning the use of ice before peritonitis had actually developed, we might succeed in preventing that condition." He further asserted that the use of ice after operation in some hundreds of cases during the last four years had been highly satisfactory. Regarding theoretical objections, he said that they disappeared as physicians became familiar with the use of ice. In his experience no injury to the skin had followed its use; the healing of wounds had not been retarded by it; and no depression of the general system had been noticed. He attributed the beneficial effect of cold to its direct and deep penetration. This opinion was based on the known effects of cold on surface inflammation; on the satisfactory results he had obtained at the bedside; on the observations of Boklikoff, who showed that cold actually penetrated deeply into the human cavities and tissues, and on his own experiments on dogs, which showed that by the local use of ice there could be produced in the abdominal cavity and without detriment to life or tissue, such a degree of cold as would retard the growth of pathogenic bacteria and contract the blood lymph channels, thus depleting the hyperemic areas and checking serous weeping into the peritoneal cavity. He related several cases in substantiation of his views and gave in detail his experiments on dogs.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Diet in Disease.

Proper digestion depends on the ability of the gastric juice and the intestinal secretions to transform starches, sugar, fats, albuminoids, etc., into an assimilable state. The proteid substances are chiefly acted on by the gastric juice and converted into peptones. The bile and pancreatic juice favor the emulsification of the fats, while the starches are acted on by the intestinal fluids and are changed into maltose and glucose. In disease the normal gastrointestinal secretions are so disturbed as to require due diligence on the part of the practitioner in prescribing that form of diet which will be most easily digested and rendered assimilable. Suggestions then as to the preparation of food for the sick-room are not of lesser importance, but, on the other hand, care in dietetics is, in association with the close observation of elimination by the skin, kidneys and bowels, the keynote to success in therapeutics. The following methods may be employed in the preparation of the different foods:

BARLEY WATER.

This may be made by grinding one tablespoonful of pearl barley in an ordinary coffee mill, add one half pint of water and boil for fifteen or twenty minutes and strain the liquid off and add salt. This preparation is recommended by Thompson in preference to oatmeal water whenever the bowels are loose. The latter prepared similarly is preferred when constipation is present. Ringer recommends the following formula for barley water: To a tablespoonful of pearl barley washed in cold water add two or three lumps of sugar, the rind of one lemon, and the juice of half a lemon. On these pour a quart of boiling water and allow the mixture to stand for six or seven hours and then strain. The barley water not used at one feeding should not be used later. Half an ounce of isinglass may be boiled in the water if desired.

RICE WATER.

This may be prepared by adding one heaping tablespoonful to one quart of water and boiled down to one pint. Rice itself contains practically no fat nor proteid substance. It is said by Davis that two and one-half ounces of boiled rice are disposed of by the stomach in three and a half hours and are absorbed very completely by the intestine. Rice is most easily assimilated when the grains are swollen and softened; this is best accomplished by steaming. The digestibility of boiled rice is said to be improved by adding a little butter, which coats the kernels and prevents their forming a pasty mass.

ARROWROOT WATER.

This may be prepared by adding one teaspoonful of the arrowroot flour to one pint of water and boiling for five or ten minutes. Arrowroot, when cooked, is more digestible than any other starch. It may be used in making gruel and when prepared in the form of a jelly it is said to keep longer than any other form of starchy foods. It is of service in the severer forms of gastritis where the irritability of the mucous membrane of the stomach is so great that other articles of diet can not be borne.

ALMOND BREAD.

Hare recommends the use of almond bread as an article of diet in diabetes. It may be prepared by taking one quarter of a pound of blanched sweet almonds and beat them as fine as possible in a stone mortar; remove the sugar contained in this meal by putting it in a linen bag and steeping it for a quarter of an hour in boiling water acidulated with vinegar; mix this paste thoroughly with three ounces of butter and two eggs. Add the yelks of three eggs and a little salt and stir well; whip up the whites of three eggs and stir in. Place the dough in molds and dry by a slow fire.

BEEF PREPARATIONS.

Meat may be prepared for the sick-room in either the solid or liquid form. Meat powders of various descriptions are on the market and are of use when it becomes necessary to administer food in a concentrated form.

Scraped beef is not infrequently prescribed by the physician in certain disorders of digestion. When finely divided it is easily digested, for by so preparing with a dull knife the indigestible connective tissue sheaths are eliminated and the pulp remains, which may further be prepared by running through a sieve. This preparation is of great value as an article of diet in dilatation of the stomach, gastritis and other diseases. It may be taken in the form of a sandwich, spread on bread. Meat can be easily powdered by drying boiled beef over a water bath and powdering it.

Mosquera's beef meal is a powdered meat prepared by digesting tender, lean beef with the juice of the pineapple and dried. By this means the muscle fiber is partly converted into peptones. It is an odorless and a tasteless preparation containing at least 80 per cent. of nutriment. It can be prepared by simply mixing it with water or warm milk or in cocoa. Like scraped beef it is a valuable article of diet in the different forms of gastric troubles, such as gastritis, ulcer and carcinoma or in any disease where the digesting power of the stomach is greatly diminished.

Somatose is another preparation which contains about the same per cent. of nutritive substance. It has but little odor or taste and is taken, without much hesitation, by patients. It may be given in the powder form spread on bread, about one teaspoonful at a time, or better, in the liquid form mixed with plain warm water, milk, soup or cocoa.

Beef juice is prepared by taking a thick tender piece of steak and broiling it over a quick fire so as to coagulate the outside only. The juice is then extracted by cutting the steak into small pieces and squeezing them in an ordinary lemon squeezer or a press especially constructed for that purpose. One or two tablespoonfuls of the juice can then be properly diluted and seasoned to suit the individual case. This preparation is of service in the conditions mentioned above; in the different infectious diseases and in the feeding of infants after they have reached one or two years of age.

Beef tea is prepared by taking one pound of lean beef, mincing it, and putting it, with its juice, into an earthen vessel containing about a pint of tepid water; let it stand for one hour and then strain, squeezing out all the juice. Place on the fire and raise slowly to the boiling point, stirring it briskly all the time.

EGGS.

Raw eggs, according to Dr. N. S. Davis, may be given directly from the shell, or seasoned with pepper or salt, or added to bouillon, coffee or milk. A very palatable preparation is made by shaking an egg thoroughly with lemon juice and sugar, and diluting the mixture with either plain or carbonized water. A very nutritious mixture can be made by shaking an egg with milk and flavoring the mixture with nutmeg or cinnamon.

Eggnog is best made by adding the yelk of an egg, well beaten, to a glass of milk to which a tablespoonful of sherry wine or whiskey has been added. Sugar and the white of the egg should be beaten together and added by stirring. Sometimes the addition of a tablespoonful of lime water is of service in aiding its digestibility. Raw eggs, according to Thompson in his "Pract. Dietetics," are often prescribed when a nutritious, highly concentrated diet is desired, and in cases of tuberculosis, some forms of anemia, and in the various wasting diseases. Sometimes from eight to ten or twelve eggs are given daily if they can be digested.

In forced feeding of melancholia or tuberculosis and nonfebrile cases, eggs are very nutritious, prescribed in the form of eggnog. In the fevers, however, according to the author, eggs are liable to produce nausea and perhaps vomiting; for this reason whole eggs are unfit for fever patients, and if used at all the whites alone should be used, prepared in the form of an eggnog.

GELATIN.

Gelatin can be used in the form of coffee jelly prepared after the formula of the U. S. Army hospitals as given by Thompson: Soak one half an ounce of gelatin in one-fourth cup of cold water for half an hour; pour on one cup of boiling water, then add one-half cup of strong coffee and two tablespoonfuls of sugar. Strain it through a cloth into a dish in which it may be cooled in a pan of ice water or in a refrigerator. A wine jelly can be similarly prepared by adding one-half cup of sherry wine and a small piece of cinnamon to flavor.

Congestion of the Eye.

Leidy, in *Amer. Med.*, says: In congestive conditions of the eye of gouty origin with pain and tenderness, I have found prompt relief not only from pain, but almost instant clearing of the conjunctiva and associated vascular system, the congested eye clearing and appearing almost normal, from the instillation of 2 or 3 gtts. of the following:

℞.	Formalin		005
	Cocain hydroch.		1
	Aq. destil.	10	

Pruritus.

Hartzell, in *Ther. Gazette*, recommends the following:

℞.	Carbolic acid	ʒss	2
	Glycerin	ʒii	8
	Camphor water, q. s. ad	℥iv	120

This is mopped on the affected parts every 3 or 4 hours; or:

℞.	Carbolic acid	gr. 10-15	.65-1
	Starch		
	Bismuth subnitrate, āā	ʒii	8
	Petrolatum	℥ss	15

Offensive Breath.

The Practitioner publishes the following:

℞.	Solution of chlorinated sodium	ʒi	4
	Peppermint water	℥vi	180

To be used as a gargle.

Tympanites.

The following is a widely used and well recommended formula:

℞.	Mag. sulph.	℥ii	60
	Spts. terebinthinæ	ʒi	4
	Tinct. asafetidæ	℥iss	45
	Mucilag. acaciæ	℥ii	60
	Aq. destil. q. s. ad.	O. i	480

M. Sig.: As an injection by a high rectal tube.

Medicolegal.

SOME 1902 LEGISLATION.

Maryland—Medical Practice Act.—Chapter 612 of the Laws of Maryland of 1902 repeals the old, and enacts a practically new, law. The two separate boards of medical examiners are retained—one representing the Medical and Chirurgical Faculty of the State of Maryland, and one representing the Maryland State Homeopathic Medical Society. No member of any medical college or university, who passes on the qualifications of graduates of any medical school, is eligible to serve as a member of either board. Each of the examining boards will prepare a schedule of written examination on anatomy, physiology, medical chemistry, surgery, practice of medicine, materia medica, therapeutics, obstetrics and pathology, and the same standard of excellence shall be required from all candidates. In the departments of therapeutics and practice, the question shall be in harmony with the tenets of the school selected by the candidate; the standard of requirements therein to be established by each board for itself. The examination must be fundamental in character. Hereafter a person desiring to practice medicine in Maryland must make a written application for license to the president of the board he may elect, accompanied by evidence as to good moral character, etc.; that he has obtained a competent common school education, and has either received a diploma conferring the degree of Doctor of Medicine from some legally incorporated college in the United States or a diploma or license conferring the full rights to practice all the branches of medicine and surgery in some foreign country; said diploma, if from a college in the United States, must have been conferred by a legally incorporated college requiring a four years' standard of education as defined by the American Medical College Association or the Intercollegiate Committee of the American Institute of Homeopathy, respectively; provided, that this requirement shall not apply to any physician who shall, prior to the passage of this Act, have practiced outside of this state for at least three years, and who shall have been duly registered or licensed in the place where he has so practiced; provided, further, that two courses of medical lectures, both of which shall be either begun or completed within the same calendar year, shall not satisfy the above requirements; provided, also, that in the case of students who at the time of the passage of this Act shall be in their second year in a medical college, a three years' course of study, or attendance on three courses of lectures delivered in different years, shall satisfy said requirements. Proof of the qualification of applicants, as above, shall, if required, be made by affidavits at the time of the making of said application and payment of fee as provided. When the applicant shall have passed an examination satisfactory to the board, the president thereof shall grant to such applicant a license to practice. If the president of either board of medical examiners shall have refused any application, either for want of the qualifications necessary to entitle such applicant to an examination, as hereinbefore provided, or for want of proficiency of such applicant on being subjected to an examination, then the president of neither of said boards shall entertain or pass on a subsequent application from said applicant until after the expiration of six months from the rejection of said previous application. The respective boards are authorized to license, without examination, applicants who present proper certificates of proficiency and professional standing at the time of application, issued by boards of medical examiners of the District of Columbia and of other states, the requirements of which are of as high a standard as those governing the boards of medical examiners of Maryland, provided such boards of such states or districts grant the same privileges to licentiates of the examining boards of Maryland, such applicants, however, being still required to furnish the same proof of qualifications required of other applicants by this section. Medical students at the end of their second year of study, who have, as verified by the certificate of the dean of the college which they have attended, completed the studies of anatomy, physiology, medical chemistry and materia medica in said college, shall, on application, be examined in such studies by the state licensing board, the result of said examination to be considered as part of the final examination, the full regular fee to be paid at this time, no part thereof to be returned, but placed to their credit for the remainder of the examination yet to be taken. Medical students who have, as verified by the certificate of the dean of the college which they have attended, completed a full four-year course of studies and lectures, but who have not yet received their diplomas, shall, on application, be examined in the branches enumerated in Section 42 by the state licensing board, the final certificate and license of the said board being withheld until the diploma of the proper medical college, with the candidate's name inscribed, be produced to the secretary of the board. Diplomas presented by graduates of foreign colleges shall be accepted if a course of four years' study has been required by said foreign college before issuing such diploma. Any physician who may change his residence from the District of Columbia to the State of Maryland, or who while living in the District of Columbia shall desire to practice medicine or surgery in the State of Maryland, shall, on application, be entitled to a license, without fee and without examination; provided, that the application be properly indorsed at the time it is presented by the examining board of the District of Columbia, certifying to the proficiency and professional standing of the applicant; and provided, further, that the examining board of the District of Columbia shall, under the laws thereof, grant like and equal privileges to licensed physicians of the State of Maryland. The examination fee is twenty dollars. Any person receiving a license shall file the same at once with the

Clerk of the Circuit Court of the county in which he or she may reside, or with the Clerk of the Superior Court of Baltimore city, if said person shall reside therein. In case of a permanent removal of residence to another county or to Baltimore, the license, or a certified copy thereof, shall at once be filed with the Clerk of the Circuit Court of the county or city. Either board may, by a vote of five members, revoke any license which it has issued, and may cause the name of any physician licensed by said board to be removed from the register of the licentiates of the city or county where it may be recorded for any of the following causes: The use of fraud or deception in passing the examination, habitual drunkenness, criminal abortion, conviction of crime involving moral turpitude or unprofessional or dishonorable conduct. Before proceeding to revoke any such license, the person against whom complaint is made shall be furnished with a copy of the complaint and charges made against him, and shall be given an opportunity for a hearing before the board, in person or by attorney, and at such hearing testimony may be offered for and against the accused. Any person shall be regarded as practicing medicine within the meaning of this Act who shall operate on or prescribe for any ailment of another, or who shall append to his or her name the letters M.D., or prefix the word Doctor, or the abbreviation thereof, Dr., to his or her name, with the intent thereby to imply that he or she is a practitioner of medicine or surgery; but nothing herein contained shall be construed to apply to gratuitous services, nor to any resident or assistant resident physicians or students at hospitals in the discharge of their hospital or dispensary duties, or in the office of physicians, or to any physician or surgeon from another state, territory or district in which he resides when in actual consultation with a legal practitioner of this state; or to commissioned surgeons of the United States Army or Navy or Marine-Hospital Service, or to chiropodists, or to midwives, or to masseurs or other manual manipulators who use no other means; nor shall the provisions of this article apply to physicians or surgeons residing on the borders of a neighboring state, and duly authorized under the laws thereof to practice medicine or surgery therein, whose practice extends into the limits of this state; provided, that such practitioners shall not open an office or appoint places to meet their patients or receive calls within the limits of this state without complying with the provisions of this Act; provided, that the same privileges be accorded to licensed physicians of this state; provided, further, that nothing in this Act shall annul any of the Acts of the present dental law of the State of Maryland, nor shall apply to any registered graduate of dental surgery now practicing in the said State of Maryland, with the sign titles: Dentist, Surgeon Dentist, Dental Surgeon or Stomatologist.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal, September 13.

1 *The Diagnostic and Therapeutic Value of Ureteral Catheterization; with Report of a Case. L. Gross.
2 *What Means, Other Than Operative, Have We for Preventing and Combating Inflammation of the Mastoid Cells? S. Theobald.
3 *A New Method of Staining the Malarial Parasites, with a Description of the Staining Reactions. C. F. Craig.
4 Ovarian Tumors: Suppuration and Malignant Degeneration. G. E. Crawford.
5 The Identification of Human Blood. J. Lisle.
6 A Case of "Black Water" Fever from the Philippines. F. M. Hartsock.
7 The Logical Status of Vaccination and the Exclusion of Unvaccinated Children from the Public Schools. A. W. Herzog.

American Medicine (Philadelphia), September 13.

8 *Surgical Features of Typhoid Fever. T. McCrae and J. F. Mitchell.
9 *The Extraction of Metallic Fragments from the Vitreous Chamber. S. D. Risley.
10 *Eyestrain and Epilepsy: A Preliminary Report. G. M. Gould.
11 *The Etiology of the Summer Diarrheas of Infants: A Preliminary Report. C. W. Duval and V. H. Bassett.
12 Are the Specific Biologic Properties of Milk Concerned in Nutrition? C. Pope and T. Sollmann.
13 *Loss of Sleep. J. Allen Gilbert.
14 Cases of Carcinoma and Sarcoma Recently Treated by Electric Sterilization. G. Betton Massey.

Philadelphia Medical Journal, September 13.

15 *Tumor of the Pharynx; an Accessory Thyroid Gland. Removal Followed by Myxedema. E. L. Shurly.
16 *Note of a Case in Which the Time Required by an Inappropriate Food to Produce Scorbutic Symptoms Was Accurately Noted. D. J. M. Miller.
17 Spinal Anesthesia, with Report of Cases. O. O. Cooper.
18 *How to Recognize Tubercular Changes in the Apices of the Lungs on Percussion. H. E. Stadlinger.
19 A Case of Puerperal Neuritis. C. J. Aldrich.

Boston Medical and Surgical Journal, September 11.

20 *The Symptoms and Treatment of Hepatic Cirrhosis in the Light of 78 Autopsies. G. G. Sears.
21 *The Clinical Value of the Iodine Reaction in the Leucocytes of the Blood. E. A. Locke.
22 Some of the Orthopedic Conditions of the Newborn Demanding Early Surgical Treatment. C. F. Painter.
23 Cirrhosis of the Liver in Childhood. J. L. Morse.

Medical News (N. Y.), September 13.

24 Empyema in Infants and Children; its Frequency, Etiology, Symptomatology and Prognosis. H. Koplik.
25 *Surgical Treatment of Empyema—A Report Based on 75 Cases, Observed Chiefly in St. Mary's Hospital for Children. C. N. Dowd.
26 *Pathology of Empyema. D. Bovaird, Jr.
27 *Bronchiectatic Abscess of the Lung; with the Report of a Case Treated Surgically with success. C. R. L. Putnam.
28 A Case of Hepatic Abscess. E. W. Demaree.
29 The Use of Simple Microscopical Methods by the General Practitioner. R. L. Pitfield.

Medical Record (N. Y.), September 13.

30 *The Surgical Treatment of Chronic Bright's Disease. J. A. Schmitt.
31 What Shall We Do with Our Consumptive Poor, Being a Discussion of Dr. Knopf's Paper. A. Meyer.
32 *The Primary Treatment of Railway Injuries. J. N. Baker.
33 *A Further Contribution to Our Knowledge of Electric Ozonation as a Remedial Agent, Especially in the Treatment of Tuberculosis. G. L. Curtis.
34 Two Unusual Complications Following Cataract Extraction: (1) Death After Cataract Extraction, from Diabetes; (2) Delirium Tremens Following Extraction of Cataract. T. R. Pooley.
35 Sanitary Protection for Rural Districts. H. B. Bashore.
36 Hydrotherapeutics in Gastrointestinal Diseases. G. Mannheimer.

Northwestern Lancet (Minneapolis), September 1.

37 Report of Some Rather Infrequent Cases Occurring in an Obstetric Practice. F. Leavitt.
38 A Case of Peliosis Rheumatica, or Schoenlein's Disease. G. D. Head.
39 Chronic Inflammation of the Pharyngeal Tonsil Without Interference with Nasal Breathing. Wm. B. Murray.
40 Physical Education. J. W. Robertson.

Albany Medical Annals, September.

41 *Persistent Hiccough. William McDonald.
42 A Case of Angio-neurotic Edema. James F. Rooney.
43 Traumatic Appendicitis. Alvah H. Traver.
44 The Influence of the Discovery of the Relation of Bacteria to Disease on the Practice of Medicine Exclusive of Surgery. (Continued.) H. Judson Lipes.

St. Louis Medical Review, September 13.

45 The Active Principle of Quackery. F. G. Nifong.
46 Report of a Case of Recurrent Diphtheria. G. C. Crandall.

Cincinnati Lancet-Clinic, September 13.

47 Appendicitis. C. L. Bonifield.
48 Ups and Downs of a Physician's Life. G. J. Monroe.
49 The Dignity of the Medical Profession. C. P. King.

Illinois Medical Journal (Springfield), September.

50 *Voluntary Nystagmus. J. Whitefield Smith.
51 The Psychoses in Bright's Disease. C. Barlow.
52 *Certain Points Regarding the Clinical Use of the Various Heart Stimulants. Arthur R. Edwards.
53 *Lymphadenitis and Abscesses of the Liver as Complications of Appendicitis. M. L. Harris.
54 Appendicitis—When Shall We Operate? H. C. Mitchell.
55 Traumatic Injuries to Liver; Report of a Case. J. L. Wiggins.
56 Life Insurance Examinations. H. B. Buck.

Kansas City Medical Index-Lancet, September.

57 *The Surgery of the Vagina. Beverly Campbell.
58 Report of a Case of Urethral Traumatism Involving the Loss of More Than One-half Inch of the Canal and Its Successful Restoration in Continuity. Jacob Block.
59 Five Cases of Exophthalmic Goiter. E. E. Morrison.
60 Enteric Fever. E. L. Cathcart.
61 Surgery of the Thyroid Gland. B. Merrill Ricketts.

Archives of Otology (New Rochelle, N. Y.), August.

62 A Study of Papuan Hearing. Charles S. Myers.
63 *On the Value of Electrolysis in the Eustachian Tube. Norval H. Pierce.
64 Acute Empyema of Frontal Sinus; Operation; Death. Dr. Von Wild.
65 Statistical Report on the Result of the Examination of a Second Series of Deaf-Mutes. Prof. F. Bezold.
66 *On Diseases of the Ear in Hysterical Subjects. Dr. Voss.

67 *The Involvement of the Gasserian Ganglion in Middle-Ear Suppuration. Robert Hilgermann.

Maryland Medical Journal (Baltimore), September.

68 *Inflammation of the Diaphragm Complicating Pneumonia. C. W. G. Rohrer.
69 The Ideal Result to Be Kept in View in the Operative Treatment of Convergent Strabismus in Children. Samuel Theobald.
70 A Fatal Case of Staphylococcus Pyogenes Aureus Infection of the Throat Resembling Diphtheria. John Girdwood.

The Medical Fortnightly (St. Louis), August 25.

71 Remarks on Splanchnoptosis (Illustrated). B. Robinson.
72 Methods of Diagnosis: Surgical. C. E. Black.
73 Scleroderma. F. S. Pearce.

Medical Examiner and Practitioner (N. Y.), August.

74 The Relation of the Examiner to the Agent. David J. Doherty.
75 The Relation of the Examiner to the Home Office. Denslow Lewis.
76 The Relation of the Agent to the Medical Examiner. J. W. Jackson.
77 Proper Claims of the Agent on the Medical Examiner. L. Brackett Bishop.
78 Can the Invalidism and Mortality Following Uterine Affections Be Diminished? With Special Reference to Lacerations and Injuries of the Uterovaginal Canal and Uterine Cancer. W. H. Irvine.
79 *[illegible] Treatment of Incipient Pulmonary Tuber- [illegible] Johnston.
80 * [illegible] James H. Stowell.

Pennsylvania Medical Journal (Pittsburg), August.

81 President's Address, Association of the Lehigh Valley Surgeons. O. E. McCarty.
82 The Pathology of Burns and Their Sequelæ. Edgar Moore Green.
83 *Burns—Their History and Treatment. J. C. Biddle.
84 A Retrospective View of Seven Years' Experience in the Climatic Treatment of Tuberculosis. Mark A. Rodgers.
85 Emergency Operation in a Case of Ruptured Tubal Pregnancy. R. G. Miles.
86 Immunity. Clement R. Jones.
87 Cerebral Disease. James W. Kaiser.
88 Two-Fold Use of Haab's Electro-Magnet in Eye Surgery. N. J. Weill.

Bulletin of the Johns Hopkins Hospital (Baltimore), August-September.

89 Transactions of the Harford Medical Society, 1787-8. Eugene F. Cordell.
90 The Doctors Gustavus Brown of Lower Maryland. Eugene F. Cordell.
91 A Contribution to the History of Medicine in the Province of Maryland, 1636-1671. Walter R. Steiner.
92 *Some Distinguished American Students of Tuberculosis. Henry B. Jacobs.
93 *America's Contributions to Surgery. Martin B. Tinker.
94 *The Toxicity of Methyl Alcohol. Reid Hunt.

New York State Journal of Medicine (N. Y.), September.

95 The Physician in Literature. Elias Lester.
96 Modification in the Methods of Operative Surgery, Resulting from Laboratory Research. Joseph D. Bryant.
97 Pelvic Inflammation in the Female; Its Diagnosis and Management by the General Practitioner. Abraham Brothers.
98 *The Broad Therapeutic Application of Ergot. Alfred Livingston.
99 The Correction of Deformities Following Osteitis of the Knee. Wisner R. Townsend.
100 Appendicitis. John B. Deaver.

The Medical Times and Register (Philadelphia), August.

101 Mosquito Work in Havana. W. C. Gorgas.
102 The Summer Diarrhea of Children. W. L. Harris.
103 Infant Feeding. M. Ostheimer.
104 The Relation of the Nose to the Reproductive Organs. C. N. Cox.
105 Typhoid Fever. J. R. Stivers.

American Journal of Obstetrics (N. Y.), August.

106 *The Trophoblast and Chorionic Epithelium, and Their Relation to Chorio-Epithelioma. Samuel W. Bandler.
107 *A Change Needed in Our Practice in Dealing with Cancer of the Uterus and Cancer of the Breast. A. Lapthorn Smith.
108 An Ovarian Sarcoma Developing from the Theca Externa of the Graafian Follicle. W. W. Russell and B. R. Schenck.
109 Report of a Case of Epithelioma of the Clitoris, with Operation. Charles P. Noble.
110 *Propriety of Simultaneous Attendance upon Scarlet Fever and Obstetrical Cases. A. Reich.
111 Cesarean Section Necessitated by Ventrosuspension. Adelaide Brown.
112 Technique of Denuding Plastic Perineum Operations. N. B. Aldrich.
113 The Early Diagnosis and Treatment of Hip Disease. A. R. Shands.
114 *Essential or Toxemic Dropsy in Children. George N. Acker.

Fort Wayne Medical Journal-Magazine, August.

115 Some Observations on Intranasal Surgery. A. E. Bulson, Jr.
116 Tuberculosis. B. Van Sweringen.

Mobile Medical and Surgical Journal, August.

117 Mastoiditis. J. A. Goggans.
118 Inflammatory Conditions of the Vermiform Appendix. W. T. Henderson.
119 A Case of Coexisting Intra- and Extra-Uterine Pregnancy. H. T. Inge.
120 Atresia of the Vagina. W. H. Blake.
121 Report of a Case of Gastrostomy. H. W. Blair.
122 Report of a Case of Typhoid Fever, Etc. D. J. Spottswood.
123 Toxemia of Pregnancy. J. B. Killebrew.
124 Surgical Fevers. W. R. Jackson.

Louisville Monthly Journal of Medicine and Surgery, September.

125 A Rare Case of Appendicitis. W. J. Leach.
126 Medico-Life Insurance. W. E. Grant.
127 The Treatment of Typhoid Fever; Report of a Case. J. W. Fletcher.
128 The Serum Therapy Fallacy. W. E. Shepherd.
129 Organic and Functional Heart Lesions. H. G. Sandlin.

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1. **Ureteral Catheterization.**—The advantages of this procedure are described by Gross, who sums up its diagnostic value as shown in the following cases: in determining "1. Whether the bladder or the kidney is the seat of the affection. 2. The presence or absence of a kidney. 3. Which kidney is involved. 4. The site of the lesion. 5. The functional capacity of each kidney. 6. The presence of a calculus in the ureter or pelvis of the kidney and its exact location. 7. The presence of strictures in the ureter and their exact location. 8. The diagnosis and site of ureteral fistulæ. 9. The presence of a pyoureter. 10. A differential diagnosis between diseases of the kidney and the surrounding organs. 11. At times a tuberculosis of the kidney. 12. The diagnosis of pyelitis, pyelonephritis, pyonephrosis, movable kidney, neoplasms of the kidney, renal lithiasis. 13. Abnormal congenital conditions of the ureter." Its therapeutic value is shown in its employment: "1. To cure pyelitis and certain cases of pyonephrosis and hydronephrosis. 2. To drain pocket formations. 3. To dilate strictures of the ureters. 4. To dislodge small calculi of the ureter. 5. To drain the kidney after nephrotomy. 6. To prevent injury to, and stitching together of, the ureter in certain operations. 7. To prevent and cure renal fistulæ. 8. As a guide to certain operations on the pelvis of the kidney."

2. **Mastoid Disease.**—Theobald believes that in case of mastoid disease, in addition to building up the system by tonics and eliminating habitual constipation if it is present, we should find by trial the antiseptic solution that is most effective in the suppuration of mastoid disease, and instead of compelling the patient to depend upon the surgeon for its application, to teach him to use it himself by syringing or douching as often as is necessary. The antiseptic solution which he has found most useful is the bichlorid of mercury in solutions of from 1 to 8000 to 1 to 4000. Except where the discharge is very profuse a daily syringing will do, and it is generally possible after a short time to increase the interval. The next to this is boric acid. As a tonic he places great confidence in a combination of the phosphates of iron, quinin, and strychnin, and in aloin for constipation. He believes also in energetic purgation with calomel as an antiphlogistic measure, and he also has faith in anodyne solutions as having a favorable influence upon the inflammatory process. Another remedy he recommends is pyrophosphate of sodium in full doses, 20 grains every two hours for an adult and less for a child. It unquestionably exerts a controlling influence upon suppurative processes. He also believes in the use of mercury for its specific action on the system.

3. **Malarial Parasites.**—The new method here described was accidentally discovered by Craig, who unwittingly used a solution of methyl violet instead of methylene blue. He describes his method as follows. Two solutions are employed. "Solution A: A saturated aqueous solution of methyl violet B. This solution should be prepared with distilled water and should be at least three weeks old. Solution B: A 5 per cent. solution of eosin. The method pursued in staining specimens is as follows: Very thin blood smears are made upon perfectly clean cover glasses. These smears are hardened in absolute alcohol for from five to ten minutes. They are next carefully dried and stained with solution A for ten seconds; then thoroughly washed in water and stained with solution B for from three to five seconds. The specimens are finally carefully dried and mounted in Canada balsam. As will be seen, the time for staining is very short, which is an improvement over the valuable methods which have heretofore been proposed. *Precautions to be Observed.*—1. Both staining fluids should

be prepared with the colors made by Grubler & Co., Leipsic. 2. The methyl violet solution should be at least three weeks old. 3. The smears should be thin and the blood evenly distributed over the cover glass. In thick smears the coloring is very diffuse and the distinction between the corpuscles and parasites nearly obliterated. 4. The methyl violet solution should not be allowed to act for longer than twenty seconds at the most, otherwise the staining is too intense. 5. The eosin solution should not be allowed to act for more than five seconds, for the same reason. 6. The specimens should be thoroughly dried before mounting, and thoroughly washed and dried between the application of the stains. If these precautions are observed carefully, good specimens are very easily obtained, and the staining reactions are very distinct. In my experience this method gives more uniformly good results than any other method with which I am acquainted." The staining reactions are very distinctive, and it is particularly valuable, he claims, in differentiating the crescents and the flagellated organisms. It can not replace the examination of fresh blood, but it is a most valuable test, he thinks, as it differentiates so distinctly the protoplasm, nucleus, and chromatin. It is easy, rapid and very uniform in its results.

8. **Typhoid Perforation.**—McCrae and Mitchell conclude their paper in this issue and summarize their experience in the following: "1. There have been treated 275 cases. 2. Of these a certain number had unimportant complications, as boils or abscesses, the cultures from which in every instance yielded pyogenic cocci. 3. Periostitis and perichondritis have been seen occasionally, always subsiding without surgical interference. 4. Glandular affections, especially mastitis, occurred, but were not serious. 5. Abscess of the liver occurred once with recovery, the cultures being practically negative. 6. There have been symptoms of cholecystitis in 5 cases, of which 3 subsided without operation, one patient was operated on and recovered, while in one the gall-bladder ruptured and general peritonitis resulting in death followed. 7. Appendicitis was suspected on admission in 3 cases and developed once during the course of typhoid fever. 8. Perforation of the intestine occurred in 8 patients. Of these 7 were operated on with 2 recoveries, a third dying of toxemia after a week. All of these 7 were recognized within nine hours, except 2, in which hemorrhage from the bowel accompanied the perforation. In one case operation was not advised because the patient was evidently *in extremis.* 9. Exploratory laparotomy was done in 2 cases in which no perforation was found. In one the symptoms proved to be due to intestinal hemorrhage; in the other to a low grade of peritonitis. The first patient died; the second recovered. 10. Eleven patients with suspicious abdominal symptoms were not operated upon. Of these, 2 died and the autopsies showed no perforation. The remaining 9 recovered." They do not claim that every case should be operated on or that every suspicious case requires exploratory laparotomy, but emphasize their opinion that in the early recognition of perforation is found the only hope of diminishing the mortality. Hence, every means should be used, and in certain cases exploration is justifiable.

9. **Foreign Bodies in the Vitreous.**—Risley reports four cases operated on with the Hirschberg magnet. He discusses the utility of the large and small magnets in such cases, especially in connection with the use of the Roentgen rays and says in conclusion: "that in the present state of our experience, in absence of definite knowledge as to the presence or exact location of the metallic fragment, the powerful giant magnet is an invaluable aid; but that, given the knowledge afforded by the skiagraph in exactly localizing the foreign body, the less powerful instruments are efficient, less costly, and more convenient in the daily routine of office and hospital practice. It remains to be shown by extended statistics which procedure

10. **Eyestrain and Epilepsy.**—Gould and A. G. Bennett report results from an investigation of 78 patients in the Craig Colony for Epileptics. Seven of these were excluded on account of organic disease of the eye or psychic or ocular amblyopia, and three, or 4 per cent., because of approximate normality will best conserve the integrity of the eye." of vision. The remainder, 68, revealed 13 cases, about 20 per cent., of myopic or compound myopic astigmatism; 54 cases, about 80 per cent., of hyperopic or compound hyperopic astigmatism; 33 cases, about 50 per cent., of unsymmetric astigmatism; 15 cases, about 22 per cent., with normal acuteness of vision (with correction); 23 cases, about 34 per cent., with moderately subnormal acuteness (with correction); 30 cases, about 44 per cent., with 20/40 vision or less (with correction); 3 cases only had regular, isometropic, compound astigmatism; 1 case only had simple regular astigmatism; 1 case only had simple hyperopia; 0 case had simple myopia; 9 cases were absolutely isometropic, i. e., about 77 per cent. had anisometropia. The muscle-imbalances of high or complicating significance were unexpectedly absent; in only one case did they require a final correction. The notable point was the enormous proportion of injurious astigmatic and anisometropic conditions which they estimate as 20 times more frequent than in normal individuals. They do not claim that these conditions caused the epilepsy, or that their correction will modify that disease. This can only be shown by experience. They do, however, think that the eyestrain may possibly have been an initial factor, and they insist on the need of its correction in the interest of the patient's general health.

11. **Summer Diarrhea.**—This is a preliminary note by Duval and Bassett announcing their discovery of Shiga's bacillus in the summer diarrhea of infants. From their findings and control observations, both by microscopic examination, cultures and serum reactions, they believe that the summer diarrhea of infants and the acute bacillary dysentery of adults are both due to the same organism, the *B. dysenteriæ* of Shiga.

13. **Loss of Sleep.**—Observations on 3 individuals who kept awake continuously for ninety hours, with various psychologic and physiologic tests, which were described partly in a former paper (Vol. 1, Studies in Psychology, University of Iowa) are reported by Gilbert. He himself was one of the subjects and two of his fellow teachers were the others. He calls attention to the following points: "Pulse is lowered by progressive loss of sleep. For the first 24 hours exercise increases the pulse rate, but as loss of sleep increases the same exercise decreases the pulse rate. After sleeping the rate rises again to normal or slightly above and exercise again increases the rate of pulse beat. Temperature is lowered by excessive loss of sleep, the normal being regained after sleep. Weight increases rather constantly with loss of sleep and decreases again after sleep. However, so many elements may be instrumental in producing this result that too much emphasis dare not be put on the statement. Strength as manifested by lifting ability is markedly decreased by loss of sleep and reinstated by subsequent sleep. Reaction-time and reaction with discrimination and choice are affected but little until the expiration of 72 hours of wakefulness, when the time is noticeably increased, sleep again decreasing it. Acuteness of vision is increased while acuteness of hearing is decreased by loss of sleep, each returning partially to normal subsequent to the period of sleep. Power of memorizing is affected but little for 66 hours, after which time it rapidly becomes poor, at times entire control being lost, subsequent sleep, however, restoring the full normal power. Rapidity of addition of figures follows somewhat the same law as power of memorizing, though not to such a marked degree. Perception, as indicated by the rapidity of naming letters, is markedly dulled by loss of sleep, full power being restored subsequent to sleep. The amount of urine excreted per hour during sleep fast was nearly double that during subsequent sleep. Comparatively little was excreted during the 24 hours immediately succeeding sleep, the usual amount being excreted, however, during the second 24 hours after sleep. During the sleep fast the amount increased steadily during the first 72 hours. That of the fourth day, taken from 9 a. m. to 9 p. m., instead of for 24 hours, showed a decrease per hour, but being taken thus on a different basis from that of the first 72 hours deduction on the same basis is impossible. Less and less nitrogen was excreted per hour during the sleep fast and relatively very small amount during sleep with increase in amount

thereafter. The amount of phosphoric acid excreted was increased during sleep fast, relatively very small amount being excreted, however, during sleep, the amount increasing again subsequent to sleep. Thus the relative amount of nitrogen to phosphoric acid decreases as loss of sleep increases."

15. **Accessory Thyroid Tumor.**—Shurly reports a case where the removal of a pharyngeal tumor, which turned out to be an accessory thyroid, was followed by symptoms of myxedema. The special point of interest was that there was no evidence of atrophy of the true thyroid body. It must nevertheless have been abnormal or functionally defective. He has seen another probably similar case.

16. **Scorbutus.**—In the case reported by Miller the time during which the condensed milk was taken before the scorbutic symptoms appeared was eight weeks, or, counting the preliminary week of fretfulness and anorexia, just seven weeks.

18. **Percussion Signs of Tuberculosis.**—Stadlinger describes his method of marking out the limits of the apex resonance on the two sides, noticing asymmetries and allowing for spinal curvature or other conditions that might affect the development on the two sides. The inner lines, other things being equal, should meet posteriorly at about the second dorsal vertebra; if on one side it goes below this, it suggests infiltration and the lower it is, the more extensive. The amount of respiratory mobility, the auscultatory signs and the condition of the basal portions of the lungs are all also to be noted.

20. **Hepatic Cirrhosis.**—The more important conclusions deduced by Sears from the 78 cases here analysed are given by him as follows: "Hepatic cirrhosis is, in a majority of instances, but one expression of the effect of a systemic poisoning. The degenerative changes in other organs are to be regarded as part of this general process, rather than as complications. The splenic tumor and dilated veins are due in part to portal obstruction, but also seem dependent on the underlying toxic cause, since they are occasionally associated with slight hepatic changes. Dilatation of the vessels may have some effect as a compensatory mechanism, but is rarely adequate to prevent ascites. Persistent jaundice and hemorrhage from the digestive tract seldom occur until the connective tissue formation is well advanced. Hemorrhage was found to be almost invariably due, when a full pathological description was given, to some gross lesion, which in most cases was an esophageal varix. Ascites occurred in practically the same proportion of cases in all four classes, and was a late symptom. Its early appearance was, with rare exceptions, associated with some form of peritoneal inflammation. Continuous fever was never found, except in the presence of complications. A brief elevation of temperature occasionally occurred, for which no cause could be discovered. No evidence was found to show that the course of the disease was not always progressive, but a high grade of cirrhosis was sometimes reached without incapacitating the patients. Surgical treatment may be indicated in a very small proportion of cases, but conclusive evidence is still lacking to show that the ascites in the cases successfully operated upon was due to hepatic cirrhosis and not to coincident conditions."

21. **The Iodin Reaction.**—This reaction, which was described by Cabot and Locke in the beginning of the present year (See JOURNAL, Feb. 22, 1902, p. 519), has been further studied by the latter author, who gives here his results with the test in a large number of conditions, and especially in appendicitis, where it affords valuable indications as to the exact condition. If absent, the process is probably an early one, and confined to the appendix; if faint or moderate, we may expect to find a small abscess or marked inflammation; if marked, a peritonitis or very severe inflammatory change in the region of the appendix is present. The reaction in the other conditions is given by him in the following conclusions. Only the intracellular iodophilia is pathologic and is here noted: "1. In septicemia always marked. 2. In abscesses and local sepsis (non-tubercular) present, except in the early stages. The intensity varies within wide limits, according to the amount of *toxic absorption. With free drainage* of the pus the brown granulation in the leucocytes rapidly diminishes within forty-eight hours, in most cases entirely disappearing. 3. In appendicitis variable, according to the extent and character of the inflammatory process. The reaction is negative during the intervals between attacks, absent or faint in the early stages of an acute attack, fair to marked in those cases which have progressed to the stage of abscess formation or peritonitis. 4. In general peritonitis uniformly striking. 5. In empyema invariably positive, generally of a marked type. 6. In dry and serous pleurisy always wanting. 7. In pneumonia (non-tubercular) present, and usually very marked in character. Following crisis, the iodophilia within a few hours becomes less marked, and if the resolution be frank, disappears in from one to two days. Abscess of the lungs and pulmonary thrombosis in the late stages give a positive reaction. 8. In simple bronchitis negative. 9. In enteritis, with severe symptoms, usually faintly positive. 10. In tonsillitis faint to marked, according to the severity of the constitutional symptoms. 11. In salpingitis positive in the presence of abscess formation or marked inflammation. 12. In gonorrheal arthritis positive, though not striking. 13. In articular rheumatism negative. 14. In gallstones variable, apparently depending upon the presence or absence of toxemia. 15. Anemia: (*a*) In pernicious anemia, in the late stages, a faint reaction; (*b*) in chlorosis negative; (*c*) in secondary anemia, of a very marked character, often positive. 16. In malignant disease positive only in the late stages. 17. In acute intestinal obstruction negative unless the bowel becomes gangrenous. 18. In cardiac disease occasionally a faint reaction in the presence of badly broken compensation. 19. In diabetes mellitus positive only in the cases of coma and complication of gangrene. 20. In about 50 per cent. of the cases of malaria positive, often marked. 21. In nephritis in more than half the cases a faint reaction. 22. In typhoid fever positive in about 50 per cent. of cases, usually only when complications or pulmonary disease, furunculosis, hemorrhage or perforation are present. 23. In tuberculosis, uncomplicated, always negative. 24. In hernia, as in acute intestinal obstruction, negative, unless septic absorption has taken place in consequence of gangrene. 25. In extra-uterine pregnancy, with rupture, negative. As will readily be seen from an examination of this summary, the reaction has both a negative and positive value in diagnosis. Septic conditions of all kinds, including septicemia, abscesses and local sepsis, except in the earliest stages, appendicitis accompanied by abscess formation or peritonitis, general peritonitis, empyema, pneumonia, pyonephrosis, salpingitis with severe inflammation or abscess formation, tonsillitis, gonorrheal arthritis and hernia, or acute intestinal obstruction where the bowel has become gangrenous, have invariably given a positive iodophilia, and by its absence all these cases can be ruled out in diagnosis. In other words, no septic condition of any severity can be present without a positive reaction. Furthermore, the disappearance of the glycogen granules in the leucocytes in from twenty-four to forty-eight hours, following crisis, with frank resolution in pneumonia and the thorough drainage of pus in septic cases, is of considerable importance. Thus in the former a positive reaction after several days, following crisis, would point strongly to delayed resolution, abscess or empyema, while in the latter it is certain evidence that the pus is not thoroughly drained. In these last-mentioned cases I have repeatedly found the iodin reaction of assistance when other signs failed to give conclusive evidence." He emphasizes the necessity of a strong illumination of the field in the examination.

25. **Empyema.**—The surgical treatment of empyema is summarized by Dowd as follows: "1. For simple cases excision of about one and a half inches of the seventh or eighth rib in the posterior axillary line; light ether anesthesia is usually employed; the purulent coagula are removed; short rubber tubing, cut partly across, doubled and held by large safety pins, is used for drainage; abundant gauze dressing is applied and changed when saturated. 2. If the patient's condition contra-indicates general anesthesia an incision into the chest may be made between two ribs under cocain anesthesia. 3. Aspiration is only used to give temporary relief in patients who are in great distress from the pressure of the fluid, or temporarily to relieve the

second side of a double empyema after the first side has been opened. 4. The patients are allowed out of bed as soon as is practicable, and the expansion of the lung is encouraged by forced expiration. 5. Irrigation is only used where there is a foul smelling discharge from necrotic lung tissue. 6. Secondary operations are not done until good opportunity has been given for healing; usually three or four months should have elapsed after the primary operation, and there should have been no noticeable improvement for about a month. 7. In the secondary operation the expansion of the lung should be encouraged by incising, stripping back, and, if necessary, removing portions of the thickened pulmonary pleura. 8. The examination of forty-four of the patients at long periods after operation indicates that recovery is usually complete in the simple cases, and that there is surprisingly little deformity in most of the severe cases."

26. **Pathology of Empyema.**—Bovaird calls particular attention in this article to the following points in the pathology of empyema: "1. Its frequency in children. 2. The frequency of bilateral cases. 3. The impossibility of drawing sharp distinction between serofibrinous pleurisy and empyema. 4. The creamy consistency of the exudate in many cases. 5. The frequency of sacculated effusions. 6. The frequency of pneumonia, especially bronchopneumonia, as a preceding or accompanying lesion. 7. So far as concerns the bacteriology of empyema, the pneumococcus is present in the great majority of cases in children, especially in the thick creamy exudates. The streptococcus or Staphylococcus pyogenes is found in a much smaller percentage of cases, especially in those not associated with pneumonia and characterized by thin purulent exudates. 8. Tuberculosis is present in but a small per centage (6 per cent.) of cases."

27. **Bronchiectatic Pulmonary Abscess.**—The differentiation of bronchiectatic abscess of the lung from tubercular cavities may be impossible and the presence of bacilli does not exclude it, though their absence in a case with slight fever and general bronchitis with a non-progressive condition of the cavity would confirm its bronchiectatic nature. Good general nutrition in a case of long standing is also confirmatory. From lung abscess or gangrene the physical signs ought to distinguish it and in actinomycosis there would be no purulent discharge unless it opened into a bronchus and a test for the parasite would also make it clear if it did. The same is true of the rare condition of hydatid. Putnam discusses the physical signs, the especially characteristic course, moist râles, etc., and thinks the *x*-rays with more perfect technique ought to be of great value. He describes the surgical treatment, including: "1. Drainage, through the bronchus, brought about by compressing the lung, allowing aseptic air or nitrogen gas to enter the thoracic cavity through a hypodermic needle during inspiration (Murphy). This operation is repeated on alternate days. Manual compression of the lung through the thoracic wound has also been suggested. 2. Drainage through the thoracic wall, external drainage," and reports a case treated by operation. In conclusion he says: "Whereas, the cases reported by Borchert, varying in age from twenty-one to fifty-two years, resulted in four deaths (one three months after operating), and one cure (requiring two years for healing of wound), making the outlook for adults seem bad; the great improvement in the case shown and reported to-night, even though not necessarily permanent, certainly justifies operative interference in cases of bronchiectasis which have progressed to abscess formation. Analysis of Borchert's cases shows that the long standing of the disease and the ravages revealed at autopsy were the causes of the fatal result, and they only emphasize the importance of early diagnosis and operation."

30. **Surgery in Bright's Disease.**—Schmitt reviews the history of the surgical treatment of Bright's disease to a certain extent. From a study of the published records he formulates the following conclusions: "1. In acute infectious diseases anuria with uremic symptoms threatening the life of the patient, can be successfully combated by capsular incision or renal cleavage, which relieves congestive swelling and excess of intrarenal pressure. Operation on one side is sufficient to bring about an abundant urinary secretion, followed by a subsidence of the alarming general features. Whether the other kidney gains time to recuperate and reassume its function, or whether reflex action plays a predominant rôle, are debatable points. At all events nature seems to get along with a small portion of functionating kidney tissue. 2. Anuria with uremic symptoms, occurring in the course of chronic Bright's disease, has afforded an occasion for surgical procedure. To recognize such an indication on reasons which are analogous to those above mentioned is, of course, a matter of individual judgment. Temporary relief, in some instances, has been gained—a permanent cure, however, has never been effected. 3. When the kidney has been operated upon directly for the cure of chronic Bright's disease the outcome has been a failure. The apparent benefit manifested in the disappearance of dropsy, dyspnea, etc., occurs just as regularly in the ordinary course of the treatment by medication and capillary drainage or puncture. 4. In exceptional cases colicky pains and hematuria are caused by chronic Bright's disease. Capsular incision or cleavage of that kidney to which the disturbances were traceable, has been attended by excellent results; there can be no doubt that, when medical expedients have failed, surgical interference has succeeded in checking the hemorrhages and alleviating the pains, but it does not inhibit the progress of chronic Bright's disease. 5. Nephropexy may cure the ailments incident to movable kidney; it may remove albuminuria, if this be the result of local irritation, consequent upon the displacement; if, however, the movable kidney is affected by chronic Bright's disease, this affliction will remain uninfluenced by operation."

32. **Railway Injuries.**—Baker emphasizes the importance of understanding and appreciating the nervous phenomena of shock, the value of normal saline infusion, intravenously, for its relief in its graver forms and the importance of prompt surgical interference on reaction. He also insists on the importance of plantar or palmar flap where the foot or hand is involved requiring partial amputation, and the necessity of avoiding sacrifice of joints and tissue and of leaving smooth, painless, non-contracted and non-cicatrized stumps.

33. **Electric Ozonation in Tuberculosis.**—This method, which was previously described by Curtis in the *New York Medical Journal*, January 18 and February 1, is again taken up by him and its theory and alleged advantages descanted on. The theory of the treatment is that by the absorption of ozone in the electrical cabinet the blood and tissues are affected, the local conditions relieved, the nutrition re-established and the circulation invigorated. Medicinal agents, exercise and any indicated special treatment are also to be used *pro re nata*. The beneficial effect on the blood is claimed to be very marked, as shown by increase of red globules and hemoglobin percentage. Curtis believes that the examination of the blood is essential in the diagnosis of incipient tuberculosis. The presence of tuberculous granular matter and broken down blood cells is evident, he says, in freshly drawn blood, and long before physical signs reveal the disease.

41. **Hiccough.**—The essential feature of hiccough is sudden involuntary contraction of the diaphragm, and our knowledge in regard to the subject is not as yet sufficiently definite. McDonald does not recognize persistent hiccough as a definite disease, or at least considers that we have few facts in our possession to warrant that conclusion. Predisposition to its existence in any abnormal nervous irritability and in any local disorder which might extend to or become contingent on any portion of the phrenic, its centers, or immediately related afferent nerves, such as the gastric branches of the vagus, may be said to offer special liability and may intensify predisposition. Of the local predisposing causes the commonest examples are pre-existing inflammation of the pleura or peritoneum. Diseases of the generative organs and digestion act reflexly in many cases. It is most frequent in childhood and in old age and more frequent in females than in males. McDonald reviews a number of cases in the literature and reports one where it seemed to be largely due to sexual excess in a nervous person. It was treated by the use of gelsemium, which seemed

to do good, though he does not credit it implicitly, and the use of the static machine. He says the moral of his studies is that we should not treat the name of the disease, nor even the disease, but the patient. Perhaps in all medicine we could scarcely find a disease, condition, or a symptom in which we could trace so easily the faltering zig-zag footprints of a groping empiricism.

50. **Voluntary Nystagmus.**—Smith reports a case and discusses the condition, reporting also experimental researches of his own on the subject. He remarks that movements of the eye may be produced by electric excitation of the motor area of the frontal lobe and the occipital cortex of the visual center region. In the former case the impulse or sensation must travel from the kinesthetic centers of the frontal cortex to the lower centers along contiguous medullary fibers which he describes as the "Z tract" or "ocular radiation" and notes the following in support of this: 1. In the projection system the anatomy seems to show the connection between the cortical centers of the frontal lobe with the ganglionic centers of the thalamus, and of these with the nuclei of the nerves of the ocular muscles, and also with the co-ordinating centers. 2. That the thalamus is an important basal ganglion not only originating fibers, but also a kind of way-station or internode through which fibers pass to and from the cortex. 3. In the "Z tract" or "ocular radiation" fibers stream outward from the side of the thalamus. Their course through the thalamus is shown by the transverse markings of the medullary fibers in the anterior, external and posterior nuclei. 4. The response in activity of the ocular muscles under the influence of electric stimulation in the region of the precentral sulcus. 5. Nystagmatic movements have been produced by passing a probe into the region of the corpora striata and optic thalami. 6. Incoordinated movements of the eyes are never intimately connected with lesions of the upper and more peripheral parts of the brain. 7. Cerebral hemorrhages involving the basal ganglia often produce conjugate deviation of the head and eyes toward the unparalyzed side. 8. Conjugate deviation of the eyes occurring as a symptom of cerebral lesion in the region of the basal ganglia is usually indirect and transitory, showing a temporary disturbance only in the tract of fibers connecting the cortex with the center of the brain.

52. **Heart Stimulants.**—The different heart stimulants are reviewed by Edwards, who notices particularly the effects of ammonia preparations. Alcohol, he thinks, has clinical indications in some cases, though not explained by laboratory findings. Strychnin is mentioned, opium and morphin he thinks are not sufficiently recognized as vaso-cardiac tonics, and lastly he mentions digitalis, which is always a prototype of the chemical cardio-vascular stimulants. It acts by increasing the tonus of the musculature, and affording a remedy by coordinating cardiac activity, slowing a very rapid heart and improving the intrinsic cardiac circulation. In moderate doses it also elevates arterial pressure by increasing the working power of the heart and contracting the arterioles from the centric stimulation and local action. It is contra-indicated 1, in balanced compensation; 2, if rest in bed, active purgation, etc., have not been previously attempted; 3, in case of adequate hypertrophy; 4, wherever danger exists in the direction of vessel rupture as in very marked atheroma, aneurism, etc.; 5, in marked fatty degeneration of the heart, that is, extreme grades of the lesion. Where the vessels are contracted strongly it may be combined with strophanthus or nitroglycerin to relieve the angiospasm. It has accumulative action as a rule, nd the dosing should be intermittent and great care used in mbulatory dispensary and office patients. In conclusion he emarks that in some cases digitoxin has seemed to be more ffective than digitalis or the other preparations.

53. **Appendicitis.**—Harris calls attention to the occurrence f lymphadenitis and local abscess of the liver in cases of apendicitis and gives statistics from various authorities showing he frequency of infection of the portal vein and liver and the ecessity of directing attention to the liver in all cases of ppendicitis that present obscure complications, and also of onsidering the possibility of appendicitis in cases of evident infection of the liver or bile tract as a possible source of the infection.

57. **Surgery of the Vagina.**—Campbell insists on the following points: "1. That prolapse of the uterus is, strictly speaking, hernia of the uterus, due to weakening of the pelvic floor from different causes. 2. In child-bearing women the cause usually is from the traumatism inflicted upon the pelvic floor incident to labor. 3. That the pelvic floor, wherever injured, should be repaired as a preventive measure in the production of hernia of the uterus. 4. That the reparative work upon the pelvic floor must necessarily be the province quite largely of the general practitioner. 5. That the physician who is competent to safely care for women in confinement, should also be competent to repair the pelvic floor."

63. **Electrolysis of the Eustachian Tube.**—Pierce has experimented in the treatment by electrolysis for narrowing of the Eustachian tube and concludes that in otosclerotic disease it is useless, and that in the great majority of catarrhal diseases it has no advantage over other methods of treatment. Only in a few cases where there is probably a soft exudate near the isthmus, may it be regarded as of value.

66. **Ear Disease in Hysteric Subjects.**—Voss summarizes his paper in the following: "1. The objective picture of an acute otitis media may appear as a symptom of hysteria. 2. Pure functional neuroses of the ear should be treated, not by an otologist, but by a neurologist. 3. In these cases an absolute contra-indication exists against too much treatment, especially of the nose and pharynx. 4. The generally well-known craving of hysterical subjects for operations may also center upon the ear (and probably also upon the nose). 5. Opening the mastoid process to relieve the mastalgia of hysterical patients is absolutely contra-indicated. 6. Our present method of aftertreatment of radical operations with prolonged tamponing is not at all suitable for children or nervous and hysterical patients. After the fifth day the tampon is entirely superfluous and should be replaced by a simple outer dressing."

67. **Gasserian Ganglion in Middle-Ear Suppuration.**—Hilgermann first reviews the anatomical relations and shows the paths which the suppurative inflammation may follow to reach and involve the Gasserian ganglion. Cases where infection has followed the path are rare. He reports one from Von Troeltsch and mentions one from Ostman. He also reports a case of his own observation in which the autopsy showed the Gasserian ganglion bathed in pus after acute mastoid disease, and others where meningitis was transmitted through the cavernous sinus or the cavity of Meckel, though the paths in all could not be so accurately ascertained.

68. **Pneumonic Inflammation of the Diaphragm.**—The conclusions of Rohrer's article are that: "1. Inflammation of the diaphragm is a common complication of pneumonia. In most of those cases in which it is not found it will be observed that the specimen was obtained from a part of the diaphragm remote from the inflamed lung. Extension of the inflammatory process from the pneumonic lung to the diaphragm takes place in two or three ways—(*a*) by direct extension; (*b*) by the lymphatics; (*c*) by the blood-vascular system. 2. To inflammation of the diaphragm is due in large part the so-called 'pleuritis stitch-pain,' also the pain in the abdomen often complained of, especially by children. When the patient lies on the affected side the pain is diminished, because there is less motion of the chest-wall and diaphragm in that position. The dyspnea of frequency, always present in pneumonia, is due in large part to the patient's efforts to restrict the movements of the diaphragm. 3. The inflammation especially involves the muscular substance of the diaphragm, and may be mild or intense, in keeping with the grade and extent of the pneumonic condition. It is of bacterial origin, the usual micro-organism being the pneumococcus."

79. **Tuberculosis.**—Johnston gives the following as the more important suspicious symptoms, arranged in the order of their prominence: 1. Cough.—A slight, hacking, persistent cough, which can be referred to the larynx or upper trachea. It is worse at night or upon lying down. There is little or no ex-

pectoration. 2. A failing appetite.—There is a repugnance for fatty foods and some degree of indigestion. 3. Loss of weight.—Patient is a few points below his average weight. 4. Sleep sweats.—Upon lying down, day or night, the patient awakens with the neck and upper chest bathed in a warm or cold perspiration. 5. *Accelerated pulse.*—A pulse of 90 to 100, which *is quick, irritable and ill sustained.* 6. *Elevation of temperature.* This is an unobtrusive symptom, but is of the highest importance. When a case of beginning tuberculosis is suspected, a temperature record at 2:30 p. m. on several successive days should be insisted upon. *A temperature elevation of 1 F. is a symptom that must be accounted for absolutely by some other condition, or tuberculosis must be suspected and confirmatory symptoms searched for.* 7. *Fistula in ano.*—When syphilis is eliminated, this condition calls for a careful examination of the chest. 8. *Pleurisy with effusion.*—A history of pleurisy with effusion in a patient who complains of *any of the* above-mentioned symptoms, is important.

80. **Albumin and Sugar.**—Stowell, while admitting the fact that the presence of albumin or sugar in the urine may amount to very little, as far as the effects on the kidneys are concerned, claims such cases should not be regarded lightly. The effects of albumin in the urine on life expectancy depend primarily on the associated conditions, such as the presence or absence of heart lesions, age and habits. The author agrees with Dr. Osler in the statement that over-eating causes more Bright's disease than does whiskey.

83. **Burns.**—Biddle uses a mixture composed of carbonate of lead, powdered acacia, bicarbonate of soda and linseed oil, made thin enough so as to spread nicely upon canton flannel, and finds it superior to any remedy as yet suggested for burns. He says if properly applied the patient will have few, if any scars. The mixture should be applied on the flannel so as to make an impervious protection to the surface and held in position by a roller bandage, all the devitalized skin being first cut away. The dressing is changed as often as necessary. When granulations get too high, salicylic acid should be dusted over the surface. The lead dressing is continued for ten days or two weeks, and sometimes longer. Skin grafting should be done early in all cases where there has been much destruction of tissue, or in parts near the tendons, or where contraction would produce an unsightly deformity. He attributes death from burns more often to *pneumonia than duodenal perforations and exhaustion is also one of the chief causes.*

92. **American Contributions to Tuberculosis.**—Jacobs gives brief biographic accounts with the pictures of a number of prominent American physicians who have contributed to our knowledge of tuberculosis, and sums up the American contributions as follows: "1. That Rush's influence directed men to study in every case the natural history of disease rather than to follow blindly some old world dictum; in his treatment of consumption he directed men into the path which with slight deviations is followed still to-day. 2. That Morton first brought back to America Laennec's methods of auscultation for the benefit of his fellow countrymen, inculcating accurate observation and stimulating the study of the morbid anatomy of the disease and spreading the knowledge of it by clear description and accurate illustration. Through his independent investigations he was led to Laennec's and Louis' views, viz., that the tubercle, singly or in groups, is the sole pathologic expression of tuberculosis. 3. That young Jackson discovered a new auscultatory feature in early pulmonary tuberculosis. 4. That William Gerhard disseminated widely the knowledge of auscultation and percussion and Laennec's pathology of consumption by his repeated publications. 5. That Bowditch demonstrated the pernicious influence of unsanitary surroundings, particularly of soil moisture, on the production of consumption, and first illustrated the safe and advantageous use of thoracentesis for pleuritic effusions which so frequently are tuberculous in origin. Moreover, that he was at least one of the first to revive the doctrine of the infectiousness of consumption, and thereupon suggested a mode of treatment which precluded the possibility of its direct transmission. 6. That Austin Flint introduced several auscultatory features of value in determining the pulmonary condition, and by his teachings was beneficial in controverting the retrogressive teachings of Niemeyer. His careful analysis of an unexampled series of cases widened the knowledge of the disease, and his unbounded influence led to the early acceptance, in this country at any rate, of the discoveries of Villemin and Koch. 7. That Flick has demonstrated that the danger lies in the dried sputum collected in infected houses. 8. That Vincent Bowditch and others have proven that in local sanatoria as well as in the mountain resorts the consumptive may recover. 9. That Trudeau has experimentally demonstrated the value of pure air in resisting tuberculosis, and has assisted in demonstrating the almost complete valuelessness of so-called specific drugs. Furthermore, that he has controverted by his experiments much that was false in regard to the value of tuberculin and in other ways greatly added to the knowledge of the treatment of consumption. 10. And finally, that many others of our countrymen whose names unfortunately can not here be mentioned for lack of time, have contributed by *their writings and by their experience, to a fuller understanding of this disease.*"

93. **America's Contributions to Surgery.**—In this article Tinker notices the special American contributions to surgery, which he sums up in the following twenty-three: "The introduction of general anesthesia. Four of the most difficult ligations of arteries (innominate, common carotid, common iliac, subclavian, scapular side of scaleni). Introduction of animal ligatures. Treatment of aneurysm by compression. Nephrectomy. Cholecystotomy. Ovariotomy. Introduction of nearly all methods of intestinal anastomosis now in use. The introduction of the proper treatment of appendicitis. Excision of the parotid. Four important excisions of bones (superior and inferior maxillæ, clavicle, interscapulo-thoracic amputation). Operation for osteomyelitis. Drainage of brain abscess. Manipulation in the reduction of dislocations. *Skin grafting. Closure of defects in cleft palate. The invention of the tonsillotome.*"

94. **Methyl Alcohol.**—Very little has been recently published, as Hunt remarks, on the general physiologic action of methyl alcohol and its difference from the better known grain alcohol. There are two forms of methyl alcohol poisoning, the acute and the chronic. While the chronic or subacute is the one of greatest interest (since it differs markedly from poisoning by grain alcohol), he describes first the symptoms of acute poisoning. The chief difference is that *the symptoms are produced more slowly and the duration of the intoxication is more prolonged. The coma does not appear until late, but continues very much longer, two, three or four days in animals, and the same differences are well known in the case of man.* The point *of greatest interest is the question of the relative toxicity* of methyl and ethyl alcohol, that is, the relative quantities of the fatal single dose. Experimentally, there appears to be but little difference between the toxicity of methyl and ethyl alcohol, some ascribing the greater to one and some to the other. Hunt's own observations are limited to determine one or two differences. Ethyl alcohol seems to cause more rapid death, that is, ethyl alcohol is slightly more toxic to dogs and rabbits than methyl alcohol. Which of the two alcohols is most poisonous to man in acute cases is the question to answer and one would hesitate in concluding from experiments that methyl alcohol was less toxic than the other. The organs most powerfully affected by methyl alcohol are the higher nerve structures which are more developed in man. As a matter of fact a number of cases are reported in which men have died from methyl alcohol where an equal quantity of ethyl alcohol would most certainly not have caused death. This has been attributed in part to the impurities in wood alcohol, but there is little evidence of this. Certain organs *are much more susceptible to injury from wood alcohol than others, as is shown in the case of the eye, numerous cases of blindness having been reported recently.* In chronic poisonings *the toxicity of methyl alcohol for animals is decidedly greater than that of ethyl alcohol and the author publishes experiments illustrating this fact.* Pohl *gives evidence show-*

ing that methyl alcohol is transformed into formic acid in the body and it seems proven that, however pure the preparation may be, it is totally unfit for use as a substitute for the grain article in any preparation which is to be taken internally and especially in preparations which ought to be taken for any length of time, in spite of contrary statements made by some recent writers.

98. **Ergot.**—Livingston has employed ergot in various diseases with remarkable success, especially where there is circulatory disturbance. He mentions a case of intense vomiting quickly relieved and a case of opium poisoning where he found it of great value. He has also used it regularly in the treatment of the opium habit. For relieving the pain of appendicitis and making the patient comfortable in asthma he thinks it advisable. He also uses it in cases of headache and has found it of great value in cases of embarrassed respiration in pneumonia as well as in other conditions, such as sunstroke, concussion, meningitis, delirium tremens, neurasthenia, sea sickness and iritis. He thinks it is indicated wherever the unstriped muscular fiber is relaxed.

106. **Trophoblast.**—Bandler's article is an elaborate discussion of the physiology and pathology of the ectodermal growths of the ovum. The article is not capable of being abstracted. In conclusion he remarks in regard to the ovarian secretion having its trophic influence on the uterus and being responsible for the function of menstruation. When fecundation and the development of the ovum take place, the ovum and its enzymes nullify the menstrual stimulation of ovarian secretion. The normal gestation is accompanied by stimulating effects of the retained ovarian secretion and when the latter is sufficient in amount and character to overcome the neutralizing action of the enzymes or ovum, labor occurs, that is to say, the same process is started again as appears in menstruation, which he says is a labor in miniature.

107. **Cancer of the Uterus and Breasts.**—We shall never know, says Smith, how many cases owe their origin to contagion carried by the examining physician's finger. He therefore insists on the isolation of hopeless cases and every precaution being taken to limit the spread of the disease. Our only hope for treatment is to get the case as near the beginning as possible and not lose a day in having the diseased area removed. From his experience he holds that in cases of cancer of the uterus we should whenever we can, without greatly increasing the primary risk, remove the adnexa as well. He insists on the importance of laceration of the cervix as the starting point for cancer growths and the significance of hemorrhage after the menopause. He would also have every lump removed from the breasts of women above 40 years of age instead of waiting to make sure that it is cancer.

110. **Scarlatina and Obstetric Cases.**—Reich holds from his observations and experience that the danger of communicating a disease like scarlatina in obstetric cases is not so great as feared. He has succeeded so far in not causing septic infection in his labor cases, and from the observations of others he believes that if the puerperal woman is infected with scarlet fever, it runs its ordinary course. While scarlet fever and puerperal sepsis may co-exist, they each occur independent of one another.

114. **Dropsy in Children.**—Acker reports four cases of dropsy occurring in children without apparent kidney disease, two of them fatal. They had suffered from gastro-intestinal disease, were in poor physical condition and worn out by the ain on the system. He has never seen this form occurring a primary disease, but always secondary to gastro-intestinal sturbance. Dropsy first appears in the face and then extends the extremities and body as in kidney disease. There are constant lesions found in postmortems, and the kidneys do t seem to be responsible, from the results of autopsies. It s been called toxin dropsy because it is supposed that a xemia has produced the edema. This, Acker thinks, arises the intestines and the dropsy is due to its action in the pillaries. If the toxins do not exist there must be some chemical alteration of the blood causing this transudation of serum.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), September 6.

1 *A Discussion on the Modification of Milk in the Feeding of Infants. T. M. Rotch and Ten Others.
2 A Discussion on the Surgery of Those Affections of the Central Nervous System Which Occur more Especially in Children. H. J. Stiles and Six Others.
3 On Defective Co-ordination in Utero, as a Probable Factor in the Causation of Certain Congenital Malformations. J. Thomson.
4 A Note on the Operative Treatment of Flail Paralytic Elbow. R. Jones.
5 The After-Treatment of Erasion of the Knee Joints. J. Collier.
6 A Note on the Surgical Treatment of Spastic Infantile Paralysis. R. Jones.
7 The Treatment of Feeble-Minded Children. A. Eichholz.
8 A Discussion on the Value of Respiratory Exercises in the Naso-Pharyngeal Lesions of Childhood. W. A. Lane and Eight Others.
9 *Buttermilk as an Infant Food. A. Baginsky.
10 Congenital Nystagmus in Father and Child. T. Fisher.
11 *Splenic Anemia of Infancy (Pseudo-Leukemic Anemia). J. S. Fowler.
12 *Splenic Anemia of Infants. C. H. Melland.

The Lancet (London), September 6.

13 An Address Delivered to the Graduates on July 26, 1902, at the University of Edinburgh on the Occasion of the Admission to Degrees in Medicine, and of the Conferring of the Honorary Degree of LL.D. upon Representatives of the Colonies. E. A. Schafer.
14 *On the Results Which Have Been Obtained by Anti-Typhoid Inoculation. A. E. Wright.
15 The Clinical Use of the Ipecacuanha Alkaloids. R. B. Wild.
16 A Plea for Tenotomy of the Tendo Achillis in Complicated Fractures of the Lower Extremity. W. Thelwall Thomas.
17 Some Observed Variations in the Phosphates and Urea of Urine. E. G. Clayton.
18 *Note on the Origin of Urine Albumin. Ludwig Aschoff.
19 *A New Route for Posterior Gastro-jejunostomy, with Notes of Four Cases. J. B. Hall.
20 *Note on the Diagnostic and Prognostic Value of the Leucocyte Variations in Asiatic Cholera. L. Rogers.
21 *Environment as a Cause of Ague. M. D. O'Connell.
22 Results in Havana During the Year 1901 of Disinfection for Yellow Fever, Under the Hypothesis That the Stegomyia Mosquito Is the Only Means of Transmitting the Disease. W. C. Gorgas.

The Journal of Tropical Medicine (London), September 1.

23 Some Clinical Notes on a European Patient in Whose Blood a Trypanosoma Was Observed. R. M. Forde.
24 Some Points in Connection with the Operation for the Extraction of Cataract in India. R. H. Elliott.
25 Marking of the Tongue an Early Symptom of Ankylostomiasis. A. B. Duprey.

Annales de l'Institut Pasteur (Paris), xvi, July and August.

26 Recherches sur la digestion chez les amibes et sur leur diastase intracellulaire. H. Mouton.
27 Recherches sur le mode de résorption des cellules hépatiques injectées dans l'organisme. J. Cantacuzène.
28 Physiologic Arsenic in Organism. G. Bertrand.—Sur la recherche et sur l'existence de l'arsenic dans l'organisme.
29 *Recherches sur le phenomène d'agglutination. C. Nicolle and Thenel.
30 Biologic Study of Paramecium in Regard to Blood Serum and to Fluorescent Substances. Ledoux-Lebard. Action du serum sanguin sur les paramécies. Action de la lumière sur la toxicité de l'eosine et de quelques autres substances pour les paramécies.
31 *Recherches sur le role de l'enveloppe des microbes dans l'agglutination. J. Defalle.
32 Les accidents consécutifs aux vaccinations, leur pathogénie et leur prophylaxie. Leclainche and Vallée.
33 Contribution à l'étude des fixateurs du sérum normal de chien (dog). Malvoz.

Nouvelle Iconographie de la Salpetriere (Paris), xv, 2.

34 Sur les affections de la cauda equina et du segment inférieur de la moelle (spinal cord). F. Raymond.
35 Anatomie des lacunes de désintegration cérebrale. J. Ferrand.
36 Infantilisme degen. compliqué de dysthyroidie puberale. E. Dupré.
37 Absence congén. des muscles grand et petit pectoral. A. Souques.
38 Syndrome de Little. G. Daniel.
39 Le sens des altitudes. P. Bonnier.
40 Topographie radiculaire des atrophies musculaires myelopathiques. R. Cestan.
41 Les urologues dans l'art. P. Richer.

Revue Neurologique (Paris), x, May 15 to June 30.

42 (No. 9.) Syndrome de Benedikt. Tubercule solitaire du pedoncle cérébral. L. d'Astros.
43 Tic et fonction. H. Meige.
44 Psycho-physiologie des mourants. N. Vaschide.
45 Atrophie gén. de la musculature de tous les viscères dans une amyotrophie progressive type Aran-Duchenne. A. Leri.
46 (No. 10.) Sclérose en plaques à symptomes transitoires et recidivants. G. Ballet.
47 2 cas de lesions limitées au splenium du corpus callosum. J. Pelnar.
48 *Du parasite trouvé dans le sang des épileptiques. Bra.

49 Nouvelle méthode de mensurations cérébrales. M. Dide.
50 (No. 11.) De la sensibilité du squelette. M. Egger.

Revue Mensuelle des Maladies de l'Enfance (Paris), xx, May.

51 Subglottic Laryngitis. Deguy.—La laryngite sous-glottique.
52 Troubles des échanges nutritifs dans le myxedème infantile. Haushalter and Guérin.
53 *La cirrhose tuberculeuse chez l'enfant (in children), 2 cas. F. Baudouin.

June.

54 La myotonie infantile et la tetanie. Hochsinger.
55 Tuberculose pulmonaire ulcéreuse chez un enfant de 5 mois. Rabot.

July.

56 De l'action des ganglions lymphatiques sur l'absorption et la resorption des graisses (fats). A. Poulain.
57 Hallucinations diurnes chez les enfants. Vergely.

Virchow's Archiv f. path. Anat. und Physiologie und f. klin. Medicin (Berlin), 169, 1 and 2.

58 (No. 1.) Ueber Plasmosomen und Granula der Nieren-Epithelien. J. Arnold.
59 Ueber die Emigrations-Fähigheit der Lymphocyten. J. Almkvist.
60 Zwei seltene Fälle von Hemicephalia nebst Prosoposchisis, compliciert mit Hernia nasofrontalis. W. P. Jukovski.
61 Beitrag zur Pathologie des primären und secundären Gallengangs-Carcinoma (of biliary passages). F. Miodowski.
62 Test of Function of Heart Valves at Autopsies. Bleichröder.—Die Funktions-Prüfung der Mitralklappe bei der Herz-Section.
63 Preservation and Stain of Urinary Sediments. Kozlowski.—Das Conserviren und Färben von mikr. Präparaten der Harnsedimente.
64 (No. 2.) Beitrag zur Casuistik der Pneumomykosen aspergillina. K. Hochheim.
65 Ueber die Herkunft (Origin) von der Cysten der weiblichen Adnexa, ihrer Anhangsgebilde und der Adenomyome des lateralen Tuben-Abschnittes. G. Schickele. (Commenced in No. 1.)
66 Ueber die Pathologie und Histogenese des sogen. "Sarcome angioplastique." K. Wlassow.
67 Elastic Tissue of Uterus During Pregnancy. N. Iwanoff.—Ueber das elastische Gewebe des Uterus während der Gravidität.
68 Destruction and Neoformation of Elastic Tissue in Case of Gastric Carcinoma. T. Inouye.—Ueber Zerstörung und Neubildung des elastischen Gewebes bei Magen-Carcinom.
69 Heteropia of Gray Brain Substance. A. Tedeschi (Buenos Ayres).—Heteropie grauer Hirnsubstanz bei einer epileptischen Idiotin.
70 Physiologic Basis for Study of Stigmata of Degeneration. G. Wolff.—Die phys. Grundlage der Lehre von den Degenerationszeichen.
71 Chemical Differentiation of Suprarenal Tumors of Kidney. A. C. Croftan.—Ueber eine chemische Methode Hypernephrome (Nebennieren-Tumoren) der Niere von anderen Nieren-Geschwülsten zu unterscheiden .

Neurologisches Centralblatt (Leipsic), 4 to 13.

72 (No. 4.) *Fatigue of the Tendon Reflexes. W. von Bechterew.—Ermüdung der Sehnenreflexe.
73 (No. 6.) Myelitis from Intoxication with Carbonic Oxid; Recovery. A. P. Panski.—Fall von acuter disseminirter Myelitis oder Encephalomyelitis nach Kohlenoxidvergiftung mit Uebergang in Heilung.
74 (No. 10.) Ueber acute cerebellare Ataxie. W. von Bechterew.
75 (No. 12.) Fecal Vomiting in Epilepsy. H. Götze.—Kothbrechen während des Status epilepticus.

Monatshefte f. Praktische Dermatologie (Hamburg), xxxv, 2 to 4.

76 (No. 2.) Zur Pathologie des elastischen Gewebes (Tissue). E. Delbanco.
77 Eine Modification der Pappenheim'schen Färbung (Stain) auf Granoplasma. P. G. Unna.
78 *Toothpick method. Richter.—Zur Spickmethode.
79 (No. 3.) *Stypticin als lokales antiphlogisticum. R. Kaufmann.
80 Medicated Powders. G. J. Müller.—Imprägnierte medikamentöse Puder.
81 (No. 4.) *Zur differential Diagnose der Syphilis und syphilisähnlicher Arznei-Exantheme (Drug Eruptions Resembling Syphilis). C. Berliner.
82 Atrophy of Nails with Total Alopecia. L. Leven.—Alopecia areata totalis (maligna), mit Nagelatrophie.
83 Impotence from Premature Total Involution of Testicles. Ibid.—Genuine Hodenatrophie, Azoospermie und Impotentia coundi.

Muenchener Med. Wochenschrift, August 19.

84 *Permanent Results of Sanatorium Treatment. F. Reiche.—Die Dauererfolge der Heilstättenbehandlung Lungenschwindsüchtiger.
85 *Diagnosis of Congenital Tendency to Tuberculosis. G. Sticker. —Zur Diagnose der angeb. Schwindsuchtsanlage.
86 Choice of Candidates for Sanatorium Treatment. R. Kobert. Ueber die Schwierigkeiten bei der Auswahl der Kranken fur die Lungenheilstätten.
87 Sanatorium Treatment. E. Meissen.—Zur Heilstätten-Behandlung der Tuberculose.
88 *Hetol (Cinnamic Acid) in General Practice. Katzenstein.—Erfahrungen über Hetolbehandlung in der allg. ärztlichen Praxis.
89 Subcutane Injektionen von Arsenik bei der Therapie der Phthise. H. Cybulski.

August 26.

90 Precipitins and Albumin Bodies in Serum. M. Ascoli.—Zur Kenntniss der Präzipitinwirkung und der Eiweisskörper des Blutserums.
91 Albumin Bodies in Exudates and Urine Precipitated by Acetic Acid. R. Stachelin.—Ueber den durch Essigsäure fällbaren Eiweisskörper der Exsudate und des Urins.
92 *Zur Früh-Diagnose der angeborenen Subluxatio und Luxatio coxae. P. Bade.
93 The Foot of the Negro. M. Herz.—Der Bau des Negerfusses.
94 Vorschlag zum bequemen Aufblasen von Luftkissen (Inflation of Air Cushions). Landgraf.
95 *Relations of Exercise, Body Warmth and Albumosuria to Each Other and to the Fever in Phthisis. G. Schröder.—Ueber die Beziehungen von Körperbewegungen, Körperwarme und Albumosurie zu einander und zum Fieber im Verlaufe der Phthise. (Commenced in No. 33.)
96 *Zur Frage der Genese der Lungen-Tuberkulose. G. Schmorl. (Commenced in No. 33.)
97 Ueber den Einfluss (Influence) von chronischer Lungen-Tuberkulose auf Psyche und Nerven. H. Engel. (Commenced in No. 33.)

Therapeutische Monatshefte (Berlin), August.

98 Ueber Ipecacuanha. R. Kobert.
99 Ueber den Werth der physikalischen Therapie. E. Lindemann.
100 Apparatus for Inhalation of Anti-bacterial Gases in Local Treatment of Tuberculosis. V. Rudolph.—Die locale Behandlung der Lungentuberculose.
101 *Expulsion of Tenia. E. Sobotta.—Vergleich über die Wirksamkeit verschiedener Bandwurmmittel nebst Versuchen das Ricinusöl bei der Bandwurmcur theilweise durch andere Abführmittel zu ersetzen.
102 Zur physikalisch-chemischen Untersuchung der Mineralwässer. H. Koeppe.
103 Zur Controle der einzelnen Tabletten und Pulver auf ihren Gehalt an stark-wirkenden Arzneimitteln (for testing Tablets). H. Dreser.
104 Ueber Perdynamin. O. Liebreich.
105 *Bottles That Separate into Halves. F. Bock (Berlin).—Zerlegbare Flaschen.

Die Therapie der Gegenwart (Berlin), August.

106 Functional Affections. L. Krehl.—Ueber "functionelle" Erkrankungen.
107 Bemerkungen zur Organotherapie im Anschluss an Fälle von Acromegalie, Myxedema infantile und Morbus Addisonii. L. Huismans.
108 Experiences with Suprarenal Substance. A. Kuhn.—Einige Erfahrungen über den therapeutischen Werth der Nebennierensubstanz.
109 Operations for Hernia. F. König.—Ueber Bruchoperationen.
110 *Treatment of Bubo. A Cedercreutz.—Beiträge zur Kenntniss des Bubo inguinalis und der Werth einiger Bubobehandlungsmethoden.
111 Recent Research on Effective Substance of Suprarenals. F. Umber.—Critical Review.
112 *Die Behandlung der chron. Gonorrhoe. J. Cohn.
113 For External Application of Menthol. L. Laquer.—Zur äusseren Anwendung des Menthol.
114 *Suprarenal Snuff for Coryza. B. Goldschmidt.—Renoform, ein Schnupfenmittel.
115 *Collargol and Ichthyol Salve. Franke.—Collargol- und Ichthyol-Salbe.
116 *Subcutaneous Injection of Air in Treatment of Neuralgia. Hester.—Therap. Verwendung Subcut. Luftinjektionen.

Zeitschrift f. diet. und physik. Therapie (Leipsic), vi, April to July.

117 (Nos. 1 and 2.) Feeding the Sick at the Berlin Charité Hospital. H. Schaper.—Die Krankenkost und die Küche der Charite.
118 Klinik und phys. Chemie. P. F. Richter.
119 Influence of Fats on Elimination of Acetone and Acids in Diabetes. K. Grube.—Ueber den Einfluss des Fettes auf dem Aceton und Säureausscheidung beim Diabetiker.
120 Extension in Nervous Affections. P. Kouindzy (Paris).—Die Extensionsmethode und ihre Anwendung bei der Behandlung der Nervenkranken.
121 *Importance of Phosphorus in Infant Feeding. W. Cronheim. —Versuche in den Stoff- und Kraftwechsel des Säuglings mit bes. Berücksichtigung des organisch gebundenen Phosphors.
122 (No. 3.) Importance of Intestinal Bacteria for Nutrition. M. Schottelius.—Ueber die Bedeutung der Darmbakterien für die Ernährung.
123 *Physiologisches über Muskelmassage. H. Ruge.
124 New Design for Hot Air Apparatus. M. Roth.—Eine neue Heissluftapparat-Konstruction.
125 *Present State of Phototherapy. J. Marcuse.—Der gegenwärtige Stand der Lichttherapie.
126 (No. 4.) Treatment of Chronic Nasal and Pharyngeal Catarrh. W. Freudenthal.—Ueber einige prakt. Gesichtspunkte in der Behandlung des chron. Nasen- und Rachencatarrhs.
127 Serum Treatment of Articular Rheumatism. Menzer.—Serumbehandlung bei acutem und chron. Gelenkrheumatismus.
128 Ueber Roborat. F. Rosenfeld.
129 Influence of Local Hydrotherapeutic Measures on Composition of Blood. A. Laqueur.—Ueber die Beeinflussung der Blutzusammensetzung durch lokale hydrotherap. Prozeduren.
130 Meat Extracts and Preparations of Yeast. K. Beerwald.—Fleischextrakt und Hefepräparate.
131 Influence of Neuenahr Water on Metabolism. B. Wendriner.—Ueber den Einfluss des Neunahrer Sprudels auf den Stoffwechsel.

Lo Sperimentale (Florence), lvi, 4.

132 Il tipo normale e le variazioni dell' arteria carotis externa. F. Livini.
133 *Sul potere antitossici della glandula tiroide. V. Remedi.
134 Ricerche batteriologico sul burro del mercato (market butter). G. Foa.
135 Ricerche su di un bacillo della setticemia emorragica dei bovini. G. Galeotti.

1. **Milk Modification for Infant Feeding.**—Rotch's article is too detailed and elaborate for abstract here. It gives his well-known opinions as regards milk modification and the data as determined by the best methods approved in this country. In the discussion following there were some slight differences of opinion expressed. Comby (Paris) and Baginsky suggested that the milk modification might have caused anemia and infantile scurvy, and the latter thought that the feeding of children was largely empirical. Rotch replied to these criticisms, stating that it has not been observed to produce such symptoms in this country, and that we had found it necessary to use our best efforts to obtain a scientifically modified milk where the whole milk was not suitable.

9. **Buttermilk as an Infant Food.**—Baginsky has tried buttermilk in the Emperor and Empress Frederick Hospital in Berlin with very favorable results. It is made from pure cream soured with bacteria and treated by adding to one liter 15 to 25 grams of wheat flour and 35 to 50 grams of cane sugar. With constant stirring it is allowed to boil for at least two minutes and then poured into sterilized bottles stopped with cotton, which are put away in the icebox for keeping. At the time of feeding they are placed in water at body temperature. While this is *a priori* far from being the ideal infant food because of its acidity and lack of fat, the results of its use seem to be excellent. Its great value is shown in acute cases of dyspepsia up to the severe grades of enteritis and diarrhea. Naturally, one would not give it, nor any other food, at the height of an attack, when the temperature is high, vomiting severe and prostration great, but it is surprising how well it is borne. He deduces the following conclusions from his experiences: "1. Buttermilk as prepared and recommended by the Dutch physicians is a good food for acutely and chronically sick infants. 2. Prepared buttermilk is well borne soon after attacks of acute dyspepsia and summer diarrhea. 3. In chronic diarrhea and chronic enteritis cases it may be looked upon as a life-saving preparation. 4. It is to be hoped that more observations be made on its use as an actual food for healthy infants. 5. In the cases which I have observed for a long time, I have never seen disturbances of nutrition such as rachitis or scorbutus develop."

11. **Splenic Anemia of Infancy.**—The conclusions deduced from the study of this disease by Fowler are given by him as follows: "1. Enlarged spleen, often associated with anemia, is not uncommon among young children. In bad cases the blood is much altered, while in slighter ones there may be little change. 2. The change in the blood differs from that in any other disease, and is characterized by (*a*) lymphocytosis, due to the occurrence of numerous transitional and probably immature mononuclear cells, and (*b*) the presence of erythroblasts, often in numbers out of all proportion to the diminution of the red corpuscles. 3. The name pseudo-leukemic anemia has been given to the more severe cases, but to draw any hard and fast line between these and slighter ones, or, indeed, to introduce further subdivisions based on any particular blood change, is entirely arbitrary. 4. Since the splenic enlargement is more constant than any single change in the blood, and since both arise independently of any other disease, it is not justifiable to regard these as cases of secondary anemia. 5. The clinical features of the condition are sufficiently definite to warrant this being looked upon as a primary disease, to which the name splenic anemia of infancy may be given. In conclusion, I have only to thank Dr. Lovell Gulland for much help in examining the organs of the fatal cases. The sections were prepared for me in the laboratory of the Royal College of Physicians of Edinburgh."

12.—Melland reports cases and discusses the pathology of the disease, especially the blood changes.

14. **Anti-Typhoid Inoculation.**—The utility of anti-typhoid inoculation has been studied by Wright and he finds that the statistics show that there was at least a two-fold reduction in the incidence of typhoid fever in the inoculated among the soldiers in South Africa during the war, as compared with the uninoculated. In some statistics there even a reduction of six-fold or more and the proportion of deaths of cases among the inoculated was approximately half that among the uninoculated. There is, however, a risk to be considered in cases where the patient's resistance is naturally low or has been reduced as often happens by a previous attack or where the patient is inoculated with a full dose of vaccine in actually infected surroundings, or where the patient is inoculated with an excessive dose and is reinoculated too soon, the system may be left more open to infection when it needs protection most. Certain facts set out in his tables seem to indicate the reality of this risk, and an attempt should be made to minimize it by working out a method of standardization of the vaccine, and by studying the blood in the typhoid convalescent and gradual success or failure of the process of immunization in the actual typhoid attack.

18. **Urine Albumin.**—From his experiments, made by injections of serum and kidney substance of rabbits into guinea-pigs and of guinea-pigs into rabbits, Aschoff finds that the results tend to confirm Mertens' experiments and to support the view that the albumin present in nephritic urine is different from the specific kidney albumins.

19. **Gastro - Jejunostomy.**—Hall recommends working through the gastro-colic omentum in making posterior anastomosis between the stomach and the jejunum. He reports cases thus operated on and finds that it is an easy and rapid method combining the advantages of both the anterior and posterior routes and affords most efficient drainage of the stomach, even when the patient is lying on his back.

20. **Cholera.**—The diagnostic and prognostic value of the leucocyte count has been studied by Rogers, who thinks that there is a definite relationship between the decrease of the percentage and the total number of large mononuclear cells and the severity of the disease. The low percentage and proportionately low total count of leucocytes is a characteristic feature. He holds that the proved leucocyte changes have considerable value in the diagnosis and prognosis of the disorder.

21. **Environment and Malaria.**—O'Connell argues for the importance of meteorologic conditions, especially the moisture in malaria, and summarizes his views as follows: "1. Cases of fever, clinically identical with malaria, occur in the blood, of which parasites could not be found after repeated search before quinin had been given. 2. The meteorological environment found where such cases occur, and, indeed, in all malarial climates, increases the amount of water in the blood of those exposed to its influence by impeding elimination through the skin and lungs (evaporation—heat loss) and through the kidneys. 3. There is known to be increase of water in the blood of those suffering from ague (Liebermeister). 4. Increase of water in the blood increases metabolism—i. e., heat production—and produces a rise of body temperature (Payne). 5. As environment thus causes diminished heat loss from the body and increased heat production within the body it is plain that it causes pyrexia. 6. This pyrexia must be of intermittent variety as the environment which produces it is of intermittent intensity—i. e., undergoes diurnal variation. 7. Elimination of water from the blood (sweat) in ague reduces the temperature to normal. 8. Increase of water in the blood produces poikilocytosis, pseudo-parasites, liberation of hemoglobin, extensive destruction of red blood corpuscles, and melanemia. 9. An extreme degree of these changes obviously leads to hemoglobinuria. 10. Increase of water in the blood produces enlargement of the spleen. 11. Removal from the environment that produces increase of water in the blood usually cures ague. 12. All treatment of ague which is efficacious reduces the amount of water in the blood. 13. From these facts I think it is not unreasonable to conclude that those cases of ague or intermittent fever in which no parasites can be found are demonstrably due to the environment under which they arise."

29 and 31. **Role of the Bacterial Envelope in Agglutination.**—Nicolle is inclined to ascribe great importance to the enclosing membrane of bacteria in respect to the phenomenon

of agglutination. He has also become convinced that every agglutinatable microbe is motile. In testing water, all motile microbes resembling the typhoid bacillus but not agglutinated by typhoid serum, can be discarded. Successive cultures of the non-agglutinating and non-motile bacteria at a comparatively low temperature will restore their motility and their agglutinatable and agglutinogenic faculties at the same time. This restoration occurred constantly in all his tests. Defalle has also come to the conclusion that, other things being equal, the greater the development of the envelope of bacteria, the greater their ability to induce an organic reaction, and the production of antibodies will be more abundant and more sensitive. Bacilli that have lost their flagella or mucous capsule confer very little agglutinating power and agglutinate but little. The bacteria with ciliated envelopes are most susceptible to the action of agglutinins.

48. **Parasite Found in the Blood of Epileptics.**—Bra found in 70 out of 100 cases the microbe he describes. Rabbits inoculated with it died in clonic convulsions. The number of the "neurococci," as he calls them, increased with an impending seizure and diminished again afterward, until none could be found during the intermissions.

53. **Tuberculous Cirrhosis in Children.**—The purely portal origin of the ascites in the two cases reported by Baudouin was demonstrated by the laparotomy which disclosed that the peritoneum was intact, and also by the success of the operation establishing anastomosis between the portal and the cava systems. This cured the ascites. The primary tubercular cirrhosis developed with cardiac symptoms and only at a later stage were the three serous membranes simultaneously invaded. The clinical course and the autopsy in each case confirmed the correctness of this assumption.

72. **Fatigue of the Tendon Reflexes.**—Bechterew attributes considerable significance to the fatigue of the knee-jerk. During convalescence from myelitis or during the development of tabes and neuritis, the readiness to fatigue is an aid for the prognosis. It is favorable when the knee-jerk becomes fatigued and weaker even to final abolition, but after an interval of recuperation, is pronounced once more. But if the readiness to fatigue increases and the reflex fails to recuperate promptly, the prognosis is unfavorable.

78. **Toothpick Method of Treating Lupus.**—Richter has slightly modified Unna's original method of treating isolated lupic nodules. He uses toothpicks made of beech wood impregnated with the liqu. stibii chlorati, which takes up the fluid well and penetrates readily into the lupic lesions but is arrested by sound tissue. The necrosed plug drops out in three or four days, and he then fits a plug of 33 per cent. orthoform cotton in its place. The cotton after fifteen minutes is then moistened with one or two drops of the same caustic and the spot covered with plaster. In two to four days more the desired necrotization is complete and the patch heals under sublimate-lead water. For nodules on the nose or near the eyes, a thorn answers better than a toothpick as it is less painful.

79. **Stypticin as an Antiphlogistic.**—Kaufmann summarizes the results of his experience in the statement that stypticin salve has a marked action on acute cutaneous inflammations, but it fails in chronic cases.

81. **Differential Diagnosis of Syphilis and Drug Eruptions.**—Berliner relates a number of puzzling cases of drug eruptions which suggested syphilitic lesions. The onset is usually more sudden than with the latter, and the intensity rapidly subsides. A protracted course is usually due to the conscious or unconscious continuance of the drug or article of food causing the disturbance. He saw a case of exanthem suggesting scarlet fever, induced by ingestion of oysters, vanish completely in four hours, and an eruption over the entire body after eating "Leberwurst" vanished in ten hours without leaving a trace, while tumors and gangrenous ulcers caused by iodin may require weeks for their complete healing. Syphilitic lesions seldom occur with itching, smarting, nausea and fever like the drug eruptions. Still more exceptional is the rapid onset and rapid extension of syphilitic lesions in the mouth such as are observed in the buccal lesions that may follow internal ingestion of antipyrin. Antipyrin, migränin and salipyrin may induce an exanthem on the penis and scrotum, but the onset is more sudden than is observed in case of syphilis. Suspension of the drug will promptly differentiate a drug eruption in most cases. Where there is the least doubt the physician should enquire in regard to recent medication and ingestion of oysters, crabs, strawberries, sausage, alcohol, etc. In one of his cases undoubted syphilis had been aggravated to a remarkable extent by iodid treatment. Gangrenous ulcerations had developed at various points, but all healed promptly under mercurial inunctions and sulphur baths. He concludes by reviewing 25 communications in literature on the subject.

84. **Permanent Results of Sanatorium Treatment.**—Reiche had occasion to examine 2273 persons for tuberculosis. Of this number 1571 were referred for a course of sanatorium treatment for at least four weeks and some required a second and third course, so that 1773 courses were given in all. He tabulates the results six to seven years after the first course and finds that 52.7 per cent. have had their full working capacity restored. Only in 118 of the patients was there complete disappearance of all objective alterations in the lungs, and in 60 per cent. of these there was recurrence of the symptoms in the course of the following years.

85. **Diagnosis of Congenital Predisposition to Tuberculosis.**—Sticker describes and illustrates a simple apparatus which he calls the thoraco-dynamometer. It registers the maximal reserve energy that can be applied to a single inspiration and the curve of encroaching fatigue. With its aid it is possible to detect abnormal tendencies in the lungs of the young or at any age, and thus avert serious consequences by altering the mode of life, business, etc., to favor deficient organs.

88. **Cinnamic Acid in Treatment of Tuberculosis in General Practice.**—Katzenstein has been treating a large number of cases of incipient tuberculosis, apical catarrh, with cinnamic acid according to Landerer's directions. (See The Journal, xxxiv, p. 1010, and xxxvi, p. 928). He prefers to make the injections in the middle third of the triceps and has found this method peculiarly suited for general office practice. His success has been so pronounced and so constant, that he considers it the best method known for treatment of patients of this class who are unable to enter a sanatorium. The mother can be cured of her incipient tuberculosis without leaving her children, and the business man without leaving his business, although all have to spare themselves as much as they can, go to bed early, sleep late and lie down an hour or two in the afternoon, etc. He concludes that any practitioner who has given this exceptionally fine remedy a thorough trial in such cases will cling to it thereafter, as he observes the vanishing of fever and night sweats, the gradual cessation of cough and expectoration and the increase in weight and improvement in spirits in nearly every case without exception. The number of injections needed varied from 20 to 72 and the duration of treatment from two to six months in his cases. He details the particulars of a number.

92. **Early Diagnosis of Congenital Luxation of Hip-Joint.**—Bade has noticed that the groove in the thigh of infants caused by the adductor muscles is always symmetrical in normal children. In case of congenital dislocation or even a tendency to it, the groove on that side is slightly higher so that the lower ends of the furrows do not meet when the legs are brought together. If this observation is confirmed by the experience of others, it will prove a valuable aid for the early differentiation and correction of congenital dislocation of the hip before the child learns to walk.

95. **Relations of Exercise and Albumosuria to Each Other and to Fever in Phthisis.**—Schröder relates a number of repeated tests on persons with and without tuberculosis, to study the problems suggested in the title. He became convinced that the increase in the rectal temperature after exercise is exclusively a local hyperthermia due to congestion of blood in the parts from the exercise of the legs. It is not at all pathognomonic of tuberculosis. He observed albumosuria only in cases

of advanced tuberculosis with considerable disturbance in the metabolism. It never accompanied the rise in rectal temperature after exertion in otherwise afebrile persons. In afebrile tuberculous subjects the difference between the mouth and rectal temperature was normal, but in persons with variable or subfebrile temperature the difference was greater.

96. **Genesis of Pulmonary Tuberculosis.**—Schmorl reports that in 15 out of 2300 autopsies he found evidences of hematogenic tuberculosis with localizations in spleen, kidneys or liver, and in the lungs. The pulmonary lesions were not in the apices but lower down. The apices were exempt in all but 2 and in these the lesions were insignificant compared with those elsewhere. In another series of 42 out of 4000 autopsies he found conclusive indications that the infection had occurred by way of inhalation.

101. **Expulsion of Tenia.**—As stated in the original title Sobotta has tried to avoid the intoxication that sometimes follows the combination of castor oil with the vermifuge. He has learned from an experience of eleven cases and from a review of others, that the best means of accomplishing this and expelling a tapeworm is to give a large dose of castor oil first, then follow with 7 or 8 gm. of extract of filicis and drive it rapidly through the body with some other purgative such as senna, not castor oil.

105. **Nursing Bottles that Separate into Halves.**—The bottle separates horizontally into two halves in the middle. Each half has a ground glass finish for a width of one to three inches from the edge so that the two parts fit in together watertight, like a glass stopper in a bottle. The two halves are held together by a small chain and spiral spring on each side which extends from the neck of the bottle to a round, flat metal plate on which the bottle stands. The action of the springs holds the parts firmly together, but the bottle can be taken apart and each half cleansed separately as easily as a bowl.

110. **Treatment of Bubo.**—Cedercreutz says that in at least one-seventh of all cases of inguinal buboes the venereal cause can not be established. They should be treated as far as possible by conservative-expectant measures, especially bags of hot sand, alcohol bandages over zinc paste, dressings with aluminum acetate and, in the very earliest stages, ice bags. When suppuration has set in, and especially in case a single gland is involved, a small incision followed by one or more injections of a 1 or 2 per cent. solution of silver nitrate or better still in most cases, of 10 per cent. iodoformed vaselin, will be found effective. About 75 to 80 per cent. of the cases treated on this plan heal without necessity for extensive operative intervention. Curetting and tamponing with iodoform gauze is the last resort, or total excision of the gland. It requires in this case four to six weeks to heal while with the other measures it heals in about two weeks.

112. **Treatment of Chronic Gonorrhea.**—The gonococcus burrows into the depths, and consequently treatment to be effectual must first dislodge them. Cohn has found that this is best accomplished by preliminary dilation of the urethra, which is a kind of massage. The chief danger in chronic gonorrhea is the participation of the prostate in the process, and especial attention should be paid to prophylaxis of this complication.

114. **Suprarenal Snuff for Coryza.**—Goldschmidt makes a powder of 5 to 10 cg. of dried suprarenal extract to 5 gm. of any neutral powder, to use as a snuff in cases of coryza, thus making practical application of the well-known properties of the extract. The powder has the same effect as the solution. He calls the snuff "renoform."

115. **Collargol and Ichthyol Salve.**—Franke has found these salves very useful as antiphlogistics. He has derived great benefit from a 10 per cent. sebum ichthyol salve rubbed on the back in cases of inflammation of the lungs. He applies it nearly half an inch thick, covering a space the size of two palms, with a wet pack over it for an hour to ninety minutes two or three times a day. The disease process is attenuated or completely aborted by the second day, both in children and adults.

116. **Therapeutic Injection of Air in Neuralgia.**—Hester had an unfortunate experience with the injection of air recommended recently as a means of combating neuralgia. The patient was a man of 47, with violent and long rebellious neuralgia of right arm and shoulder. About 200 c.c. of air were injected above the scapula, but the pain was immeasurably aggravated for five days, after which conditions remained the same as before the injection.

121. **Importance of Phosphorus in Yolks of Eggs in Infant Feeding.**—Cronheim has been much impressed with the benefit derived by infants from phosphorus administered in the form of the yolks of eggs. He advises commencing early to add it to the diet.

123. **Physiologic Study of Massage.**—Ruge states that five minutes' massage will allow a fatigued muscle to recuperate better than ten to twenty minutes' rest. The power of a muscle can be increased three to seven fold over its last effort by five minutes' massage. After massage a much greater stimulus is required to induce tetanus than previously, especially in muscles that have been fatigued.

125. **Present State of Light Treatment.**—Marcuse summarizes the present achievements in this line as: 1, Finsen's treatment of lupus is an absolute specific; 2, local treatment with light, with the exception of lupus, is a still unsolved problem; 3, general treatment with arc lights is a measure for the psychic influencing of functional nervous affections, and 4, general incandescent light treatment is merely a method of applying heat, but has proved to be the best method at our disposal for inducing perspiration.

133. **Antitoxic Potency of the Thyroid Gland.**—Remedi injected various toxins directly into the thyroid gland of dogs, avoiding traumatism as much as possible. He found that diphtheric toxin and also bacterial nucleo-proteids caused an increase in the secretory activity of the gland, but failed to produce any processes of inflammation or necrosis such as follow their injection into other noble tissues. He suggests the possibility that the gland exerts an antitoxic action which neutralizes the toxin and prevents the development of otherwise inevitable necrotic processes.

New Patents.

Patents of interest to pharmacists, etc., September 2 and 9:

708,452. Dilator. Ernst Beist, Magdeburg, Pa.
708,322. Invalid bed. 'Ella B. Dones, Cincinnati.
708,216. Electromedical appliance. Jonathan O. Fowler, Jr., New York.
708,340. Fracture apparatus. Joseph P. Gordon, Rockford, Ill.
708,224. Syringe. Frank C. Gundlach and W. R. Ludewig, Pittsburg, Pa.
708,365. Electromedical appliance. John H. and A. T. Kliegl, New York.
708,371. Bed-pan cover. Helen C. Lipps, Boston.
708,068. Surgical appliance. Philip H. T. Paulinetti, Philadelphia.
708,402. Abdominal and back-supporter. Howard C. and L. C. Rash, Salinas, Kan.
708,975. Baker's oven. Charles E. Glafke, Los Angeles.
708,659. Soda-water dispensing fountain. Morris H. Petigor, New York.
708,738. Pasteurizing apparatus. Baldwin F. Schirmer, Indianapolis.
708,953. Catamenial sack. Mattie M. Spaulding, Chattanooga, Tenn.
708,685. Artificial limb. Charles P. White, Spencer, N. C.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington. D. C., Sept. 4 to 10, 1902, inclusive:

Robert M. Blanchard, lieutenant and asst.-surgeon, U. S. A., leave of absence for one month granted.

Louis Brechenim, major and surgeon, U. S. A., member of an Army retiring board convened at Manila, P. I.

W. Fitzhugh Carter, major and surgeon, U. S. A., leave of absence for one month and five days granted.

Carl R. Darnall, captain and asst.-surgeon, U. S. A., relieved from further duty at Plattsburg Barracks, N. Y., to report to the Surgeon-General for duty in his office; he is detailed as recorder of the board in session at the Army Medical Museum for the examination of candidates for admission into the Medical Corps of the Army.

William H. Forwood, surgeon-general, U. S. A., retired from active service, Sept. 7, 1902, by operation of law, he having attained the age of 64 years.

Harry M. Hallock, captain and asst.-surgeon, U. S. A., member of an Army retiring board convened at Manila, P. I.

Frederick E. Jenkins, contract surgeon, member of an examining board at Fort Barrancas, Fla., vice Major William D. Crosby, surgeon, U. S. A., relieved.

Samuel E. Lambert, lieutenant and asst.-surgeon, U. S. A., from Fort Morgan, Ala., to duty at Washington Barracks, D. C.

Charles E. Marrow, lieutenant and asst.-surgeon, U. S. A., relieved from duty on the transport *Hancock*, and on the expiration of his present leave of absence will report for duty at Fort Sheridan, Ill.

James V. May, contract surgeon, from Fort Strong, Mass., to his home, Philadelphia, for annulment of contract.

Harry S. Purnell, lieutenant and asst.-surgeon, U. S. A., to proceed to Fort Riley, Kan., for temporary duty pertaining to the military maneuvers to be held at that post, and thereafter to return to his proper station.

Merton A. Probert, contract surgeon, leave of absence extended one month.

Robert E. Sievers, contract surgeon, from Louisville, Ky., to duty at Fort Harrison, Mont.

Cary A. Snoddy, lieutenant and asst.-surgeon, U. S. A., as Lieutenant Purnell, above.

William E. Vose, lieutenant and asst.-surgeon, U. S. A., leave of absence for one month granted.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending September 13:

P. A. Surgeon E. G. Parker, from the *Pensacola*, September 10, and to duty on the *Adams*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the twenty-one days ended Sept. 11, 1902:

Assistant Surgeon-General W. J. Pettus, granted leave of absence for seven days from August 25.

Surgeon John Vansant, placed on waiting orders, to take effect Aug. 20, 1902.

Surgeon H. R. Carter, granted five days' extension of leave of absence from August 29.

Surgeon C. E. Banks, granted leave of absence for one month from September 12.

P. A. Surgeon M. J. Rosenau, to proceed to Vera Cruz, Progreso, Jalapa, Coatzacoalcos, Orizaba and Tampico, Mexico, for special temporary duty, August 23.

P. A. Surgeon Rupert Blue, granted ten days' extension of leave of absence from August 30.

Asst.-Surgeon J. F. Anderson, detailed as Acting Director of Hygienic Laboratory during temporary absence of the Director, P. A. Surgeon M. J. Rosenau.

Asst.-Surgeon L. D. Fricks, granted six days' leave of absence under paragraph 201 of the regulations.

Asst.-Surgeon V. G. Heiser, to proceed to Boston, for special temporary duty.

Asst.-Surgeon V. G. Heiser, relieved from special temporary duty at Washington, D. C., and directed to report to Commissioner-General of Immigration for instruction relative to services as temporary immigrant inspector in Canada.

Asst.-Surgeon D. H. Currie, to rejoin station at 641 Merchant St., San Francisco.

A. A. Surgeon H. J. Beard, granted eighteen days' leave of absence from September 7.

A. A. Surgeon Francis Duffy, granted leave of absence for six days from August 20.

A. A. Surgeon W. J. Linley, granted thirty days' leave of absence on account of sickness.

A. A. Surgeon F. P. Sams, to assume temporary charge of Service at Charleston, S. C., relieving Surgeon John Vansant.

A. A. Surgeon W. L. Savage, granted fourteen days' leave of absence from August 11.

Pharmacist and Chemist F. MacDowell, Department letter of July 31, 1902, granting thirty days' leave of absence from August 2, 1902, amended so that said leave shall take effect from August 16.

Pharmacist and Chemist A. M. Roehrig, detailed to represent the Service at meeting of American Pharmaceutical Association at Philadelphia, September 8, reporting at Bureau en route.

Pharmacist and Assistant Chemist W. L. Stearns, granted twenty days' leave of absence from Sept. 3, 1902.

Pharmacist S. W. Richardson, as Pharmacist Roehrig, above.

Pharmacist C. G. Carlton, granted seven days' leave of absence from Aug. 14, 1902, under paragraph 201 of the regulations.

Assistant Surgeon-General J. H. White, granted leave of absence for seven [illegible] September 7.

Assista[illegible] T. Vaughan, detailed to represent the Servi[illegible]ical Society of Virginia, to be held at Newp[illegible]3-26, 1902.

Assista[illegible] J. Pettus, to proceed to Baltimore, Md., for [illegible].

Surgeo[illegible]anted two months' leave of absence from September 9.

P. A. Surgeon C. P. Wertenbaker, granted fourteen days' extension of leave of absence from September 6.

P. A. Surgeon A. R. Thomas, granted leave of absence for ten days from September 5, on account of sickness.

P. A. Surgeon L. C. Cofer, leave of absence granted by Department letter of July 29, 1902, amended to take effect from September 10.

Asst.-Surgeon V. G. Heiser, granted leave of absence for fifteen days.

Asst.-Surgeon T. D. Berry, granted two months' extension of leave of absence from September 3, on account of sickness.

Asst.-Surgeon B. J. Lloyd, relieved from duty at Nome, Alaska, on closure of navigation, and directed to proceed to San Francisco Quarantine, and report to medical officer in command for duty.

A. A. Surgeon C. W. Bailey, granted ten days' leave of absence from August 27.

A. A. Surgeon Hugh Burford, granted leave of absence for twenty-eight days from September 5.

A. A. Surgeon A. C. Fraser, granted ten days' leave of absence from September 15.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for seven days from September 16.

A. A. Surgeon R. H. McGinnis, granted thirty days' leave of absence from October 1.

A. A. Surgeon W. C. Mason, granted leave of absence for five days from September 15.

Pharmacist E. B. Scott, granted leave of absence for nineteen days from September 6.

BOARDS CONVENED.

Board convened at Washington, D. C., August 27, to revise regu[illegible] Service. Detail for the Board: Assistant [illegible] Purviance, chairman; Assistant Surgeon-[illegible]; Surgeon A. H. Glennan; Surgeon P. M. Carrington; Asst.-Surgeon B. S. Warren, recorder.

Board convened at Stapleton, N. Y., September 11, for the purpose of examining revenue cutter officers on that date, and from time to time thereafter. Detail for the Board: Surgeon P. H. Bailhache, chairman; P. A. Surgeon A. C. Smith; Asst.-Surgeon A. F. Stimson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General Public Health and Marine-Hospital Service, during the week ended Sept. 13, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 18-31, 18 cases, 18 deaths.

Colorado: Denver, Aug. 23-30, 4 cases.

Massachusetts: Aug. 30-Sept. 6, Boston, 8 cases, 2 deaths; Cambridge, 1 case; Quincy, 1 case.

Michigan: Ludington, Aug. 23-30, 2 cases.

Minnesota: Minneapolis, July 5-26, 4 cases; Aug. 3-16, 2 cases.

Missouri: St. Louis, Sept. 1-8, 1 case.

Montana: Butte, Aug. 31-Sept. 7, 1 case.

Nebraska: Omaha, Aug. 31-Sept. 6, 3 cases.

New Hampshire: Manchester, Aug. 31-Sept. 6, 2 cases.

New Jersey: Camden, Aug. 30-Sept. 6, 2 cases, 2 deaths; Hudson County, Jersey City included, Aug. 24-Sept. 7, 3 cases; Newark, Aug. 30-Sept. 6, 5 cases, 2 deaths; Plainfield, Aug. 30-Sept. 7, 1 case.

New York: New York, Aug. 30-Sept. 6, 12 cases.

Ohio: Ashtabula, Aug. 30-Sept. 6, 1 case; Cincinnati, Aug. 29-Sept. 5, 1 case; Cleveland, Aug. 30-Sept. 6, 84 cases, 13 deaths; Dayton, Aug. 30-Sept. 6, 1 case; Youngstown, Aug. 23-30, 1 case.

Oregon: Portland, Aug. 1-31, 4 cases.

Pennsylvania: Butler, Aug. 14-21, 1 case imported; Johnstown, Aug. 30-Sept. 6, 7 cases, 1 death; McKeesport, Aug. 31-Sept. 6, 3 cases; Philadelphia, Aug. 30-Sept. 6, 2 cases, 1 death; Pittsburg, Aug. 30-Sept. 6, 19 cases.

South Dakota: Sioux Falls, Aug. 30-Sept. 6, 1 case.

Tennessee: Memphis, Aug. 30-Sept. 6, 1 case.

Utah: Ogden, Aug. 1-31, 6 cases; Salt Lake City, Aug. 23-Sept. 6, 3 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 9-23, 1 case.

Brazil: Pernambuco, July 24-31, 11 deaths.

Belgium: Brussels, Aug. 16-23, 1 case.

Gibraltar: Aug. 18-24, 1 case.

Great Britain: Dublin, Aug. 23, 1 case; Liverpool, Aug. 9-23, 17 cases, 3 deaths; London, Aug. 16-23, 18 cases, 3 deaths.

Greece: Athens, Aug. 16-23, 1 death.

India: Bombay, Aug. 4-12, 6 deaths; Calcutta, Aug. 2-9, 1 death.

Italy: Naples, Aug. 9-23, 7 cases, 1 death; Palermo, Aug. 16-23, 3 cases, 2 deaths.

Russia: Moscow, Aug. 9-16, 6 cases, 1 death; St. Petersburg, Aug. 9-16, 2 deaths.

Straits Settlements: Singapore, July 12-26, 4 deaths.

Venezuela: Valencia, Aug. 25, present.

YELLOW FEVER.

Colombia: Panama, Aug. 25-Sept. 1, 5 cases.

Costa Rica: Port Limon, Aug. 21-28, 1 case.

Cuba: Havana, Sept. 1, 1 case from S. S. *Monterey*, from Vera Cruz.

Mexico: Coatzacoalcos, Aug. 23-30, 4 cases; Progreso, Aug. 16-23, 1 case, 1 death; Vera Cruz, Aug. 19-25, 22 cases, 12 deaths.

Venezuela: Valencia, Aug. 25, present.

CHOLERA—INSULAR.

Philippine Islands: Manila, June 22-July 12, 820 cases, 604 deaths; Provinces, June 22-July 12, 5,343 cases, 4,126 deaths.

CHOLERA—FOREIGN.

China: Amoy, Aug. 2-19, 15 cases estimated; Hongkong, Aug. 22-29, 8 cases, 7 deaths.

Egypt: Cairo, Aug. 9-16, 1 death.

India: Calcutta, Aug. 2-19, 18 deaths; Karachi, Aug. 3-10, 8 cases, 8 deaths.

Japan: Tokyo, July 27-Aug. 2, 2 cases; Okayama, July 29-Aug. 3, 224 cases.

Russia: Amur District, July 16-22, 123 cases, 68 deaths; Charbin, June 14-20, 112 cases, 44 deaths; Girin, July 14-20, 175 deaths; Inkow, July 6-17, 128 cases, 106 deaths; Mudken, July 12-15, 87 cases, 73 deaths; Manchuria, to July 19, 54 cases, 24 deaths; Vladivostock, Aug. 14, 4 cases; Zizikar, July 11-13, 57 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Aug. 20-31, 6 cases, 6 deaths.

PLAGUE—FOREIGN.

Brazil: Pernambuco, July 9-23, 4 deaths.

Egypt: Cairo, Aug. 9-16, 2 cases, 1 death.

India: Bombay, Aug. 5-12, 27 deaths; Calcutta, Aug. 7-14, 15 deaths; Karachi, Aug. 3-10, 3 cases, 3 deaths.

Russia: Odessa, to Aug. 22, 9 cases, 1 death.

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Original Articles.

THE SURGICAL ASPECTS OF PANCREATITIS.*

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Balzer, in 1879, first described acute pancreatitis with fat necrosis. Little attention was attracted to the subject, however, and it was not until Fitz, ten years later, wrote his classical papers that the medical world really became aware of the inflammatory diseases of the pancreas. Fitz soon after pointed out the fact that many supposed cysts of the pancreas due to traumatism were really accumulations of fluid in the lesser cavity of the peritoneum and the omental bursæ.

A proper understanding of chronic pancreatitis has been largely due to Robson, who first noticed the disease in connection with his operative work upon the biliary tract. In fact, the surgical study of the inflammatory diseases of the pancreas may be said to be the result of an inquiry into the causation of some of the complications of gallstone disease. The reason for this depends upon certain anatomic facts. Brewer, discussing the question from this standpoint, calls attention to the embryologic development of the organ. The pancreas is a racemose gland without a firm capsule, its protected situation defending it from injury. It is originally formed of two offshoots from the intestinal tube, each having a duct communicating with the intestine. The two buds soon coalesce, the upper channel, known as Santorini's duct, becomes obsolete and the inferior or duct of Wirsung, carries on the function. Later investigations show that the duct of Santorini is not usually completely closed, although ordinarily functionless. Schirmer found that in only two out of 105 cadavers was this duct absent, and in 53 it was capable of carrying the entire secretion of the gland through its intestinal orifice, which is situated about one and one-half inches above the opening of the pancreatic duct of Wirsung. It is to be noted that as the pancreas develops, it is completely surrounded by peritoneum, the posterior layer in later life becoming infiltrated with fat, changing its character; and aiding to account for the direction of diffusion of material escaping from the pancreas. The common duct of the liver passes around the head of the pancreas between it and the second part of the duodenum. For one and one-half inches the common duct lies fused or in close contact with, the main pancreatic duct and in the submucous tissue, joins with it, forming the ampulla of Vater. The joint opening on the duodenal surface is situated four inches below the pylorus.

It is easily seen that a gallstone may obstruct the common intestinal orifice without blocking the pancreatic duct, or at any point in the lower inch and a half of the common duct, may exert injurious pressure upon the pancreatic duct, or a stone may occlude it entirely at the diverticulum of Vater, thus explaining the etiologic relationship existing between pancreatitis and gallstone disease.

This brings us to the effect of this pressure on the pancreas. Hildebrand experimentally ligated the pancreatic duct and the result was acute pancreatitis, usually of the hemorrhagic type, with or without fat necrosis. Opie repeated Hildebrand's experiments with the same results. He also found that injecting the pancreas with irritating fluids through the duct would produce acute pancreatitis, and in Halsted's case the postmortem examination developed the fact that a stone at the papilla had so obstructed the opening that bile had passed throughout the pancreatic ducts, causing the fatal pancreatitis. Evens, in one case of fat necrosis, at autopsy found the pancreas stained with bile, even in the tail. Flexner, in experimental work, demonstrated that acute pancreatitis resulted from the injection into the ducts of many substances, such as dilute gastric juices and so forth and this without an infection.

He also produced the disease with various bacterial cultures which he injected into the ducts. Brewer, in this connection, also points out the effect of the passage of large stones through the papilla, in relaxing the sphincter and permitting of infections from the duodenum. Robson, in his operative work, found twenty cases or more in which chronic pancreatitis resulted from partial obstructions or infections of the duct, interfering with free drainage. The pathologic condition present was a chronic interstitial pancreatitis with enlargement and hardening of the gland, much resembling malignant disease. This enlargement of the head of the pancreas compresses the common duct and causes jaundice.

It can be seen that a gallstone obstructing the papilla may cause bile to pass through the duct of Wirsung and in some cases out the duct of Santorini, resulting in pancreatitis, or the main pancreatic duct might be obstructed and yet the pancreas escape by reason of the accessory duct of Santorini. Considering the frequency of gallstones and infections of the liver ducts which must affect the pancreatic ducts more or less, biliary calculi occupy the most important position as to the causation of pancreatitis, and the form which the disease takes depends, to a large extent, on the amount of obstruction and the degree of infection or chemical irritation which takes place. In thirteen recently reported cases of acute pancreatitis operated on gallstones were found in ten. Pancreatitis also occurs independent of gallstone disease, through infections from the gastro-intestinal tract, as during the course of a duodenitis, gastric ulcer or cancer; and at times its origin is intrinsic, having no external evidences as to its causation.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

Pancreatitis has been divided by Robson into acute, sub-acute and chronic. The knowledge of acute pancreatitis has been gained so largely from postmortem examination that we recognize only the more severe grades of the disease. The few surgical observations with recovery, and the accumulations of fluid of pancreatic origin due to traumatisms, occurring in the omental bursa, in connection with certain heretofore unexplainable complications found during operations on the biliary tract, lead to the belief that many cases of acute pancreatitis are not recognized because recovery has followed. It is altogether probable that this disease is not so fatal a malady as our limited knowledge of the subject would lead us to believe. The course of the acute form is so often marked by hemorrhage into and about the pancreas that the disease has been called acute hemorrhagic pancreatitis without regard to whether hemorrhage was a prominent factor or not, and in other cases fat necrosis was so important a feature that no reference was made to the pancreas at all.

Acute pancreatitis often follows injury as in one of Robson's cases, in which a servant fell against the corner of a table, striking the abdomen over the pancreas and in forty-eight hours was dead from this cause. The disease is ushered in by the most acute and sudden pain in the epigastric region, with profound collapse. The abdomen becomes at once distended and this, with the nausea or vomiting, may lead to the diagnosis of intestinal obstruction. Among the special symptoms noted are "nervous unrest" (Halsted and Opie), "repeated attacks of collapse" (Fowler), "lividity" (Evens), hiccough (our own case).

In the hemorrhagic form, death usually follows in a few hours or days. The indications at this time are to relieve the shock and sustain life. If the patient tide over these acute symptoms and a subacute pancreatitis is established, death may result later from infection, with formation of abscess, and it is in this condition that incision and drainage may aid recovery as in cases reported by Fowler and others. The drainage may be anterior through a tube protected by gauze packing, or a large posterior incision at the left costovertebral angle, as recommended by Robson. In the few successful cases reported the drainage was prolonged weeks or months.

Fat necrosis is the most interesting phenomenon connected with acute pancreatitis, and occurs in a large percentage of cases, and may co-exist with the hemorrhagic form or in some of the cases which end in recovery without hemorrhage or infection, as in the case which we reported.[1] The symptoms are those of an acute form of pancreatitis with repeated attacks of shock and collapse, probably as new foci are formed by fresh leakage from the pancreas. The fat necrosis is usually limited to the upper abdominal region and affects the omentum, mesentery and retroperitoneal fat by preference, although cases have been report in which the epicardial fat has been involved and ev the bone marrow. In Beck's case the peritoneum w attacked, having much the appearance of tuberculos The distribution of the areas involved is hard to explai Is it due to intraperitoneal leakage with absorpti through the lymphatics, or is it not possible that t development of the pancreas as an intraperitoneal org and the fatty conversion of the posterior layer of t peritoneum may be the important factor in the diffusi of the irritant?

The appearance of fat necrosis is characteristic. Li tle areas of opaque spots scattered throughout the f of a whitish or brownish hue, and from the size of millet seed to that of a pea, or often very much large The pancreas itself may be so slightly affected that i has been overlooked upon examination. This is th most reasonable explanation of cases reported withou mention of the pancreas. Why does injury or diseas of the pancreas cause hemorrhage and fat necrosis Robson's observation that there is a greater tendenc to hemorrhage in cases of jaundice complicated wit pancreatic disease, has been confirmed by the experience of others, and it is probable that disarrangemen of its secretory function may have this effect. Th action of the pancreatic secretion upon the fats is t split the fat globules into fatty acids and glycerin, an it has been thought that the absorption of the glycerin may so act. It would appear, however, that the amount of glycerin absorbed would be too small to account for the phenomenon. The fatty acids unite with the calcium salts, giving rise to the opaque spots which characterize the disease. As aids to diagnosis, glycosuria, fatty stools, lipuria and so forth, are of value, but are not often present, and therefore if not found have no negative weight. Mr. Cammidge, in a few cases, discovered a peculiar crystal in the urine which he has described (Robson). Opie found steapsin in the urine obtained after death in one case. Walker points out that the absence of pancreatic secretion from stool is shown by a pale color of the feces, much like that peculiar to cholemia. Most cases have at some time a rise of temperature and as a cholangitis is often the source of infection in acute pancreatitis, chills and fever with sweating may be expected in this class of cases. Opie, in 29 cases of chronic pancreatitis which came to necropsy at Johns Hopkins, found the three most common causes to be pancreatic calculi, gallstones in the terminal portion of the duct, and carcinoma, and notes its frequent appearance as a complication of cirrhosis of the liver. Glycosuria coming on late in the course of hepatic cirrhosis is suspicious of interstitial changes in the pancreas. In the diagnosis of the chronic forms of pancreatitis Thayer says that the feces should be searched for excess of fats and for fragments of the pancreas. Evidence of imperfect digestion of albuminoids, as shown by Sahli's glutoid capsule, he also believes to be of value.

In acute and subacute pancreatitis the surgical indications, beyond the opening and draining of septic accumulations in or about the pancreas, would be the removal of the gallstones, if present, and the establishment of free drainage through the gall-bladder, relieving the tension and aiding the secretions to escape. This alone resulted in the recovery of the case reported by Beck, and our case.

The most important diagnostic feature of chronic pancreatitis is jaundice and in thin subjects the enlarged pancreas may be felt. Frequently a distended gall-bladder can be palpated, which is unusual in stone obstructing the common duct. The slow course aids in differentiating from malignant disease.

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[1] Jour. A. M. A., Jan. 12, 1902.

The treatment of chronic pancreatitis is by drainage, and this is best accomplished by way of the gall-bladder. We have had seven well-marked cases, four treated by cholecystostomy, three by cholecystenterostomy; twice the anastomosis was made to the transverse colon and once to the duodenum. All recovered and the ultimate result in the cases in which the transverse colon was used was as good as with the duodenum. It is sometimes difficult to make a satisfactory anastomosis between the gall-bladder and duodenum in these cases, on account of adhesions. Cholecystostomy is preferred by Robson. but the prolonged external discharge is a cause of much annoyance to the patients.

DISCUSSION.

Dr. John C. Munro, Boston—For the early and accurate diagnosis of an acute pancreatitis some simple laboratory test is most desirable, but so far none has been discovered and it is doubtful in my mind if any test better than the clinical will be of use any more than is the case in diagnosticating an appendicitis. The onset and course of a goodly proportion of cases of acute pancreatitis is so rapid and alarming that for the present we must depend on our clinical observation, and it is with this in view that I offer the result of my own experience, trusting that by the accumulation of such experiences we may sooner or later acquire a sufficiently accurate knowledge of the various symptoms and their importance to enable us to make an early diagnosis.

For the benefit of the general practitioner who sees the cases at the beginning of the attack, and for the benefit of the surgeon who frequently must operate without delay if operation is to be of benefit, we must have some means of making a fairly accurate, rapid diagnosis, without being obliged to await the results of a complicated and tedious laboratory investigation.

That acute pancreatitis is more common than the books teach I have no question. A certain proportion recover spontaneously, and I believe the proportion is larger than we suspect. In such cases operation probably does neither harm nor good. But there is a type with extensive, rapidly forming necrosis for which operation offers the best means of relief, but to accurately distinguish between the two types is probably as impossible at present as it is impossible to always predetermine a mild from a fulminating case of appendicitis.

Altogether I have seen nine cases of undoubted acute pancreatitis where the diagnosis was verified by operation or autopsy or both. In addition, I have seen a number of cases, typical as to symptoms, of strongly suspected pancreatitis, but without operative or pathologic verification. No cases of the latter group are included in this analysis, nor are those met during operations for gallstones, etc.

Of the nine cases included here I saw three in consultation with Dr. Paul Thorndike, who operated on all and saved two. One of these was supposed to be a tubercular peritonitis and the abdomen was closed; the other had a hard swollen pancreas without necrotic softening, and recovered after a temporary drain. His third case had extensive necrosis and died in spite of drainage.

A fourth case I saw with Dr. F. B. Lund, of extensive necrosis, and with improvement for several weeks. This case and three of my own have been reported in full by Dr. Lund in the *Boston City Hospital Med. and Surg. Reports.* Of my own cases, five in all, two with extensive necrosis recovered; one died on the table; one died in a few hours, and the fifth in a few days, following operation. I will briefly analyze the history and symptoms in these cases.

Six had had one or more attacks preceding the present one, described by the patients as exact counterparts, but less severe. Another patient had been operated on for some pelvic trouble two years before, but the abdominal symptoms had persisted ever since the operation. This patient recovered after an exploratory laparotomy, and one is tempted to suspect that she had suffered from a chronic pancreatitis with occasional subacute exacerbations. One of my own recoveries had had distinctly no preceding attacks, and from the case that died on the table no early history had been obtained. Vomiting and pain, often sudden and severe, or a severe outburst in a more or less extended period of mild pain was practically present in all cases. Occasionally there was a chill, but not always, and not necessarily in the severest cases. In only three cases could a tumor be felt, once in the left renal and hypochondriac region, and twice to the right of the umbilicus. But considering that every patient, with the exception of one only, was markedly fat, and that in all but one there was more or less distension, it is not to be wondered at that a tumor, if present, could be overlooked. The large majority looked ill, not necessarily peritonitic, and on the evidence of the facies, mainly, was operation performed in one or two instances. Abdominal spasm was practically always present, but less marked than in the ordinary case of infected peritonitis, with other signs of equal gravity. Under anesthesia spasm, as a rule, persisted only in the upper portion of the abdomen. Associated with spasm was tenderness, general, or general with increase in the upper abdomen or loin. Location of pain had practically no significance. The pulse ranged from 100 to 140, and the temperature from 99 degrees to 104 degrees in different cases. Elevation of the pulse seemed to be of more importance than elevation of the temperature. In only one case was sugar noted definitely. In some, careful repeated urinalyses proved negative. In the remainder it was not observed in the ordinary routine examinations.

Leucocyte counts were not of value. So far as could be told at operation in recovery cases, and in fatal cases without autopsy, gallstones were absent in 7, but in two of these there was slight jaundice. Jaundice was present in the two in whom gallstones were found, and it is possible that slight degrees of icterus were overlooked in others. Obstipation was of less significance than one would expect, and when supposedly present it yielded to a high cathartic enema.

In conclusion, I would offer the following suggestions as diagnostic aids:

1. A history of preceding attacks.
2. Vomiting with sudden acute abdominal pain in fat patients.
3. Abdominal distension with moderate spasm.
4. Tenderness in upper abdomen.
5. The facies, not peritonitic.
6. Slight or fleeting jaundice.
7. Previous history of gallstones.

Dr. Henry O. Marcy, Boston—In reference to the statement that operative interference is comparatively rare, I would like to offer one case that has not been published. The patient was a strong man, in middle life, who entered the hospital for biliary obstruction, deeply jaundiced and in extreme suffering. He showed evidence of a double tumor, one over the gall-bladder, and one to the left of the middle line. It was believed that the man had some malignant trouble, but he demanded exploratory operation without further delay. On opening the gall-bladder, which contained 12 ounces of fluid, an extraordinary accumulation of gallstones was discovered, numbering nearly one thousand and weighing about four ounces. The second tumor was accounted for by a very large pancreas, which later soon returned to its normal condition. This was evidently consequent on obstruction of the pancreatic duct from presence of the gall-bladder tumor. Rapid recovery ensued and the patient remains well at the end of three years.

Dr. Emmet Rixford, San Francisco—It has been my misfortune to have had three cases of extensive fat necrosis following chronic pancreatitis due to gallstones, the condition being made out in each case at operation. Two were in very fat women and the third in an equally fat man. In one case the mass of necrotic fat was as large as a man's fist, making a hard tumor which could be felt through the abdominal wall.

Two cases died of sepsis, one on the fifth day, the other after subsequent intestinal obstruction and gastro-enterostomy. In a third case I opened the abdomen for intestinal obstruction and peritonitis in a man of 50 years who gave a definite history of multiple attacks of gallstone colic. The small intestine was found to be gangrenous for a distance of twelve inches or more and it was evident that the mesenteric vessels were obstructed. Resection of the necrotic gut was performed, but the patient was too weak to permit of anastomosis, so the ends were simply brought outside. The patient lived five days, dying of exhaustion. Autopsy showed that there was no peritonitis but that the fat necrosis had so extended as to completely surround a large radicle of the portal vein and encroach on its lumen. A small clot formed at the point of constriction caused complete obstruction. This case shows very well how destructive are the substances which cause fat necrosis in these cases. in all three cases there were present gallstones in the gall-bladder and in two of them in the common duct. Most of the stones were small, perhaps the size of a pea, suggestive of what Opie has said as to the size of gallstones which theoretically should be the cause of pancreatitis. In all three cases there was definite pancreatitis of chronic character. In another case which has but a negative connection with this subject there was complete obstruction to the flow of bile for four months, due to a small carcinoma of the diverticulum of Vater. I was able to remove the tumor, relieving the obstruction and to replant the duct into the duodenum. It was interesting to note that the duct from the pancreas entered the duodenum by an independent opening about three-quarters of an inch from the papilla. There was, therefore, no opportunity for the bile to enter the pancreas. There was no fat necrosis and where exposed the pancreas was sound. The patient lived a year, succumbing finally to recurrence of the carcinoma.

Dr. W. A. Batchelor, Milwaukee—Eight months ago I had a case of acute pancreatitis in a man about thirty-seven years of age. He was taken ill suddenly with epigastric pain, nausea and vomiting and the case was at first thought to be one of intestinal obstruction. There was a little fever and rapid pulse. About nine days afterward symptoms of collapse occurred with a recurrence of the severe epigastric pain, which pointed, evidently, to a second attack of hemorrhage. Not until that time was the diagnosis made. The discovery in the epigastrium of a tumor mass, palpable and almost perceptible, had much to do with making the diagnosis. The case was operated on two days later by a median incision, and the omentum opened between the stomach and the colon. The tumor mass was in the region of the pancreas. It was opened and six or eight ounces of blood clot and necrotic gland tissue washed out and the cavity drained. The drainage was continued for several weeks. In these cases minute particles of fat necrosis are noticed as soon as the abdomen is opened. The case was interesting on account of its rarity; and I have listened to Dr. Mayo's with great interest. It seemed to me in thinking over this case that it contained some things which should help us in our diagnosis, which is so often made postmortem; and in the consideration of these cases the diagnosis is one of the most important points—and rarely easy.

Dr. George W. Crile, Cleveland, Ohio—I would like to report one case—a female, 23 years of age, who had had one previous attack. Her temperature ranged from 100 to 103, her pulse from 130 to 160, with acute pain all over the abdomen. The case seemed to be one of obstruction, the vomiting continuing a number of days. The patient was watched for ten days, during which time operation was delayed. The bowels finally moved; diagnosis was not made. The patient subsequently died and autopsy showed pancreatitis.

Dr. William L. Estes, South Bethlehem, Pa.—There is one point not mentioned in Dr. Mayo's excellent paper which I think is important, and which was first brought to the attention of the profession by Mayo Robson. It is a fact that the gross physical characters of the gland in some cases of chronic pancreatitis very closely resemble carcinoma. I have had several cases of chronic pancreatitis; the physical signs in one of them were those of carcinoma. In this case I cut down on a very large gall-bladder, but absolutely no obstruction in the ducts was found. The head of the pancreas was very large; in fact, so large and hard that I thought it was a case of carcinoma. I gave a very bad prognosis. In order to relieve the condition of jaundice, however, I drained the gall-bladder. To my astonishment, the man made an absolute recovery. I have had several other cases, but only wish to add this one to the paper just read in order to call the attention of the Section again to this deceptive condition.

Dr. F. T. Stewart, Philadelphia—I would like to mention a case of acute pancreatitis on which I operated and in which there was a protracted history of gastric disturbance, with violent outbreaks of vomiting. The patient was a woman, aged about forty years and very fat, who had suffered two days' illness, indicating acute intestinal obstruction, high up, before I saw her. The urine contained neither albumin nor sugar. An incision was made above the umbilicus and a fat necrosis immediately encountered. At first this was thought to be a peritoneal carcinomatosis. The pancreas was very much swollen, and infiltrated with spots of hemorrhage. The patient died soon after the operation and postmortem showed fat necrosis in the peritoneum, in the mesentery and in the perirenal fat. There was a stone in the pancreatic duct, but none in the gall-bladder. This case gave the usual history of many of these cases, the real diagnosis being made postmortem.

Dr. Mayo, in closing—Dr. Estes brings up a very important point which the limited time did not allow me to discuss. Acute pancreatitis must be very much more common than we have supposed, and it is not necessarily so fatal a malady as we have believed it to be.

OBSTRUCTION OF THE BOWELS FROM MECKEL'S DIVERTICULUM.*

JAMES E. MOORE, M.D.
MINNEAPOLIS.

Notwithstanding the fact that modern surgery has brought the mortality rate from obstruction of the bowels down from 95 to 60 per cent., it continues to be one of the most desperate conditions the surgeon is called on to treat, and every experience and observation which will help us to reduce this mortality still lower should be welcome.

This subject has been so well written up by Fitz,[1] Kammerer,[2] and Halsted,[3] that it is necessary to dwell but very briefly on the history and pathologic anatomy as an introduction to the report of my three cases.

Meckel's diverticulum is a diverticulum of the ileum and is a portion of the unobliterated omphalo-mesenteric canal of fetal life. Although it bears Meckel's name, it was first described by Ruysch in 1701, while Meckel's article did not appear until 1809. From the fourth to the sixth week of fetal life the abdominal plates close, cutting off the vitelline or omphalo-mesenteric duct, which is the communication between the umbilical vesicle and the primitive intestinal canal. This diverticulum may be found on the ilium anywhere from one to four feet from the ileocecal valve. It is usually less than four inches long, but has been reported ten inches in length. It is usually cone-shaped, with its lumen somewhat less than that of the bowel, but it varies greatly in size and shape.

Fitz believes that duplication of the intestinal tract is due to the remains of the vitelline duct. He also suggests that an esophageal duplication or diverticulum may be due to fetal remains. Any portion of the omphalo-mesenteric duct may be cut off, causing a cyst. These cysts may be in the abdominal wall or within the abdomen. The omphalo-mesenteric duct sometimes remains open, discharging feces at the umbilicus as in Case 1 of this paper. Some remains of the omphalo-mesenteric duct is found in about 2 per cent. of all bodies examined. In 3400 examinations made at St. Bartholomew's Hospital a Meckel's diverticulum was found twenty-seven times or about one in every one hundred and twenty-six bodies. Mitchel's observations in a very large number of bodies teaches us that a diverticulum is of much more frequent occurrence than formerly believed.[4]

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

[1] American Journal of the Medical Sciences, July, 1884.

[2] Annals of Surgery, 1897.

[3] Annals of Surgery, April, 1902.

A Meckel's diverticulum has frequently been mistaken for a vermiform appendix and an inflammation caused by a diverticulum has been pronounced appendicitis, as in Case 3 in this paper. A verdict for one thousand dollars was recently given by a jury in one of our western states against a surgeon who admitted that he had removed a Meckel's diverticulum instead of an appendix.

A short diverticulum with a free end is not very likely to cause obstruction, but the point is very commonly attached, which makes a band stretched across the abdominal cavity which may cause obstructions in a number of different ways. This attachment may be to the abdominal wall at or near the umbilicus, to the mesentery, to the small intestine and to various other points within the abdomen. The most complete form of Meckel's diverticulum is that in which the omphalo-mesenteric duct is still attached to the umbilicus and patulous throughout. The round cord frequently passing from the apex of a diverticulum to the umbilicus may be either the remains of the vitelline duct or the omphalo-mesenteric bloody vessels or both. It is now generally believed that inflammatory adhesions of the apex of a diverticulum to surrounding parts is a rare occurrence. The most frequent variety of obstruction is where this cord and the diverticulum form a loop through which the intestines pass as in Case 2 in this paper. That part of the ileum between the diverticulum and the cecum is the part usually obstructed.

The symptoms of obstruction from a diverticulum are those of obstruction from any cause, but occasionally they are of such a character as to make an accurate diagnosis possible. The suggestion that the possession of a harelip, clubfoot or other congenital deformity by a patient suffering from obstruction of the bowels would point to a diverticulum as the probable cause of the obstruction is not a practical one and might even be misleading. Localized meteorism in the right inguinal region in a young male patient, as in Case 2 in this paper, is strong presumptive evidence of obstruction from a diverticulum.

The treatment of intestinal obstruction from Meckel's diverticulum does not differ from that of obstruction from any cause, for the only rational treatment in all cases is early operation, but a positive diagnosis would aid the surgeon in securing an early operation and would help him to locate his incision properly. Fitz concludes that in operation for acute intestinal obstruction not due to intussusception and without local symptoms the incision should be made in the right lower quadrant. The main points in the operation are to relieve the obstruction as early and as quickly as possible, and when the conditions of the patient will permit, to remove the diverticulum. Under these conditions the prognosis is remarkably good, but when operation is delayed it is necessarily bad.

Case 1.—Baby F., aged 7 months, was brought to my office on *Jan. 23, 1896*, suffering from symptoms of obstruction. The child was very frail, weighing only twelve pounds. It had been born at seven months and is said to have weighed only two pounds when born. Its umbilicus had always been moist and rather prominent. A few days before I saw this child it had been attacked with a severe cough and the umbilical protuberance had gradually enlarged. Upon examination a hernia about as large as the first two phalanges of my index finger presented. The surface was raw and congested and the child was very weak, constantly crying and straining. A probe could be passed through the apex of the hernia into the abdominal cavity. The child was taken to my office operating room and prepared for operation in the usual manner. At first we feared to give an anesthetic because the little one was so very frail, but we soon found that it would be impossible to control the intestines without it, so chloroform was administered. An incision was made through the abdominal wall just below the umbilicus and the hernia found to contain a Meckel's diverticulum with an opening in its apex. The diverticulum projected at a right angle from the small intestine and was about two and one-half inches long. The child was in collapse so that removal of the diverticulum could not be considered. The opening into the apex was closed by Lembert sutures of silk, the bowel reduced and the abdominal wound closed with silk sutures. The child was carried home in its mother's arms on a street car. Dr. Cutts attended it afterwards and it made an uninterrupted recovery. One year later it was reported to be thriving and in good health.

Case 2.—On Aug. 26, 1901, I was called to see J. A. C., a well-developed healthy boy of four years. His bowels had always been very regular, moving usually twice a day, but for the two days preceding his present illness he had been constipated. On August 25, the day before I saw him, the mother administered a cathartic which was followed by two movements of the bowels. In the afternoon of the same day the boy began to have severe cramps in the bowels. The pain began about the umbilicus and radiated in all directions. More cathartics and an enema were given with very little result. He suffered all night and in the morning Dr. Gould was called and made a diagnosis of intestinal obstruction and advised that a surgeon be sent for at once. Upon examination we found the abdomen somewhat distended, tenderness everywhere, temperature normal and pulse 150. He was constantly crying out with pain and making frequent efforts to vomit. He was taken to the Northwestern Hospital as soon as possible and taken directly to the operating room, where chloroform was administered. As soon as he became unconscious a tumor could be felt in the right lower quadrant. It could be moved about quite freely and was tympanitic, evidently being composed of distended bowel. I then made a diagnosis of obstruction by a Meckel's diverticulum, and made an incision through the right rectus muscle. Very dark distended bowel came at once into view and abundance of serum escaped. On introducing a hand a tense band attached to the bowel close to its mesentery could be felt constricting the bowel. This band was clamped and cut when the bowel began at once to improve in appearance. The band proved to be the remains of the omphalo-mesenteric vessels extending from the tip of a Meckel's diverticulum to the mesentery. The diverticulum and band had made a loop through which about ten inches of the gut immediately above had passed. Below the point where the band was attached to the mesentery the gut was collapsed. The diverticulum was cone-shaped and about three inches in length. It was very dark colored, but very soon improved in color after the obstruction was relieved. The band was ligated and cut away at both ends. The patient was in collapse and removal of the diverticulum was out of the question. The abdomen was quickly closed and the patient given the usual treatment for shock. He rallied promptly and made a speedy recovery. The stitches were removed on the eighth day and on the tenth day he was taken home where Dr. Gould kept him in bed a few days longer. The boy has been in good health ever since. I am satisfied that an attempt to remove the diverticulum would have resulted in death.

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[4] Journal of Anatomy, vol. xxxii.

Case 3.—This patient was operated on by my colleague, Dr. A. W. Abbott, to whom I am indebted for memoranda of the case and permission to report it. I was present during part of the operation. The patient, C. R., male, aged 19, was first attacked with severe pain in the region of the appendix about eighteen months before the present illness. It came on suddenly after pitching a load of hay. He was sick in bed two weeks after this with fever. He had never been well since the first attack. He had suffered from very obstinate constipation, distension of the bowels, loss of appetite and gradual loss of flesh and strength. About Jan. 23, 1902, he began to suffer from pain, fever and complete loss of appetite. After two weeks suffering he was brought to the city and placed under Dr. Abbott's care. At this time the patient was weak and emaciated and bowels would not move; pulse 100, temperature 99. A tender solid mass about two inches in both diameters, dull on percussion and slightly movable, could be felt at the right of the navel. A diagnosis of appendicitis with adhesions causing intestinal obstruction was made for which Dr. Abbott operated on Feb. 8, 1902.

An incision was made through the right rectus muscle directly over the mass. Two loops of intestine were adherent to the abdominal wall close to the umbilicus and a Meckel's diverticulum passing between them was adherent at the umbilicus. One feature of this operation was very interesting to me as a spectator and to a less experienced operator than Dr. Abbott might have been very embarrassing, indeed. Before the diverticulum was recognized and while separating adhesions from the abdominal wall the open end of a bowel suddenly appeared in the wound. This was the open end of the diverticulum, but it looked as if the bowel had been torn across and the other end left to empty its contents into the abdominal cavity. The diverticulum was cut off near the bowel and the opening closed in the usual manner. The loops of intestine were freed from the abdominal wall and dropped back. The vermiform appendix, which was the seat of a mild chronic inflammation, was removed. The patient, with the exception of a mild ether pneumonia, made an uneventful recovery and was restored to health.

DISCUSSION.

Dr. W. J. Means, Columbus—My experience with this class of cases has been limited, owing probably to a failure to recognize the true condition. I have never recognized an obstruction from Meckel's diverticulum. I had two cases of cysts of the diverticulum that were very interesting, but these are scarcely apropos to the paper. I have seen obstruction of the bowels, especially in children, the cause of which was hard to explain. After listening to Dr. Moore's paper it occurs to me that possibly some of them might have been due to the diverticulum. The profession is certainly under many obligations to Dr. Moore for presenting a paper of this kind. Every surgeon that does abdominal work will more fully recognize the importance of having in mind the possibility of an obstruction of the bowels due to an attenuated diverticulum. While an obstruction from such a cause must occur infrequently, yet the cases presented in this paper and those that have been recorded by others, are sufficient in number to demonstrate that we do occasionally meet them. There is one important point, however, that must be remembered. There are no diagnostic signs peculiar to obstruction from the diverticulum that enables the surgeon to differentiate it from obstruction due to other causes. The importance, it seems to me, in recognizing this form of obstruction, depends largely on the fact that the diverticulum is a hollow tube, and should be ligated before section the same as an appendix. Adhesive bands can often be torn asunder without ligature. The subject is yet in the stage of evolution and will, no doubt, receive closer attention from abdominal surgeons in the future. We can anticipate, therefore, more exact data on the diverticulum as a factor in the causation of obstruction of the bowels.

Dr. M. B. Tinker, Baltimore—We have had three cases of Meckel's diverticulum which have been operated on in the past two years at the Johns Hopkins Hospital, and I should think Dr. Moore's estimate of the condition occurring in 2 per cent of the cases is perhaps not far from right. In one of our cases the diverticulum did not give rise to obstruction. The patient came in with symptoms of strangulated hernia and at the operation a small diverticulum was found in the hernial sac which was, no doubt, giving rise to the obstructive symptoms. It was at first thought to be the appendix after excision, but it was recognized that we were dealing with the small bowel as, of course, the diverticulum is always on the small bowel. After a short search the appendix was found and although perfectly normal was removed. I mention the case as one of interest in that one might mistake a diverticulum for an appendix. This form of hernia is not so very uncommon and it has been mentioned in literature two or three times within the past year. We have had two cases of obstruction of the bowel from Meckel's diverticulum, one of them coming in on the twelfth day from a place far distant in the South. This patient died, but one treated in the same way as Dr. Moore's, in which the obstructed symptoms were urgent, recovered.

Dr. J. C. Munro, Boston—I recall at least four cases in adults, and I think that the diagnosis can be made in a certain proportion of cases. The patient may give a preliminary history of attacks of obstruction coming on suddenly and leaving as suddenly, which distinguishes them from appendicitis or obstruction due to inflammatory causes. In two of my cases the diverticulum was on the left and not on the right side, so that we operated in the median line. In one case, an infant 12 hours old, brought to the hospital, I found a double intussusception herniated through an open Meckel's diverticulum, requiring excision and anastomosis. The case lived only a few days.

Dr. L. L. McArthur, Chicago—These congenital anomalies may make their manifestations in one of two ways: mechanically or inflammatorily. I have had a case illustrating each variety. In one case the differential diagnosis seemed to rest between intestinal obstruction and appendicitis. I was requested to operate. I made a median incision close to the right of the umbilicus because convinced there was obstruction by band, the symptoms, in my opinion, being more that of a gradual intestinal obstruction than those of an inflammatory trouble in the appendix. Dr. Billings' diagnosis was acute appendicitis. On introducing my finger a band was immediately found. Following it downwards from the inner aspect of the umbilicus it was found to pass over the appendix, cutting the wall of the appendix by pressure gangrene and causing leakage. It was not appendicitis *per se*. In another case in the practice of Dr. Meacher the symptoms resembled appendicitis. He opened the abdomen in the region of greatest tenderness; a perforation was found of a prolongation from the small intestine of very large caliber tapering down to that of an appendix. This proved to be a diverticulum that had perforated from a mass of fecal matter producing pressure ulceration.

Dr. D. W. Graham, Chicago—The pictures do not convey quite the idea that the title of the paper intends. One of them looks like a hernia of the diverticulum. The interesting thing is not the hernial protrusion of the diverticulum, but that it is a factor in simple obstruction. Something like the last picture shows a permanent attachment of the diverticulum. In these cases the obstruction is purely mechanical and the same condition is brought about where we have a band running from the aorta to the umbilicus. The liability to simple mechanical obstruction is always present where there is a band attached to the umbilicus. In these cases the obstruction is purely mechanical. Why attempt a differential diagnosis? I think this is wholly impracticable and unnecessary. The practical point is, have we mechanical obstruction or have we not? A short time ago a case that had recently gotten over an acute attack of appendicitis still complained of some troublesome symptoms and I opened the abdomen. I found a small pus sac of fecal matter which communicated on one side, and on the other side the distal end was open. I merely mention this as an incident not closely related to this subject.

Dr. W. T. Eckley, Chicago—There is now in the Pathologic Exhibit a case of Meckel's diverticulum reduced to a very small thread, which might easily be mistaken for a peritoneal adhesion in a surgical operation. This diverticulum is found in a case of sympus apus reported by Dr. McDermid of Chicago. The specimen, as is common in such cases, has absence of anus and external genitals. The uterus is bicornute and no bladder is present. The urinary apparatus consists of a mesonephros opening into a cloaca. The child was born at term and lived a few hours. Whether cases of sympus apus as a rule present abnormal development of the products of the Wolffian body and Muller's duct and show Meckel's diverticulum, I am unable to say. Notwithstanding the very small size of the diverticulum in this specimen, it is hollow and admits the passage of a bristle.

Dr. Moore, in closing—The suggestion made by Dr. Munro that the condition is originally a mechanical rather than a septic one is interesting, but we should remember that it becomes septic later. Dr. McArthur's case is like Dr. Treves'. I wish to defend my artist against Dr. Graham's criticism of the picture, which he says illustrates rather a hernia than an obstruction. You may be sure there is an obstruction where you see such a condition as this picture shows. He further says that the diagnosis need not be made. This is an unscientific position. Dr. Eckley's remark concerning the hollow band attached to the diverticulum simply calls for the suggestion that I made that it is advisable always to ligate and cut between ligatures because you may have an open diverticulum or a blood vessel that may bleed profusely.

Dr. Graham—I did not say we should not make the diagnosis. I simply stated we need not attempt to make a diagnosis between the kinds of obstruction.

ANATOMY FOR THE PRACTITIONER.[*]

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The post-graduate study of gross anatomy, normal and pathologic, is for the practitioner a subject of great importance. There is a strong necessity for a continued review of these fundamental subjects, in order that clinical procedure may rest on a scientific basis. A mere book review, however, on which the great majority of practitioners are obliged to depend, is very inadequate. How then shall the practitioner review his knowledge of practical anatomy? The ideal method is, doubtless, for the practitioner to attend from time to time the post-graduate courses in normal and pathologic anatomy offered in the leading medical schools. Here he will find an abundance of material, well-equipped laboratories and valuable assistance from the instructors. Only a small percentage of the practitioners, however, are fortunate enough to be able to take advantage of these facilities. For numerous reasons such courses are inaccessible to the great majority. It is the purpose of the present paper, however, to call attention to numerous opportunities for the home study of practical anatomy which are open to every practitioner who is willing to devote a little time to the subject.

LAWS GOVERNING DISSECTION BY PHYSICIANS.

In considering this matter two important questions arise: 1. How and where can material be obtained for the study of human anatomy? 2. What methods can be used in preserving and studying the material? In regard to the first question, the most desirable material is, of course, the human cadaver. In order to learn under what conditions physicians are legally entitled to human cadavers for dissection, I have mailed a copy of the following inquiry to each secretary of state, or the secretary of the state medical association of every state and territory in the union:

> *Dear Sir:*—In order to make a report to the American Medical Association, I wish to know whether, in your state, medical practitioners outside of medical schools are entitled to human cadavers for dissection; and if so, under what conditions. If you are unable to give me the desired information, please refer this inquiry to some one who can, and greatly oblige, yours respectfully, C. M. Jackson.

Replies have been received from all the states except South Dakota and South Carolina. From these replies it appears that in regard to their anatomic laws, the states and territories may be divided into three classes, nearly equal in size: 1. Those in which there is no statute whatever relating to the subject. This class includes Alabama, Arkansas, Arizona, Delaware, Florida, Idaho, Indian Territory, Montana, Mississippi, North Carolina, New Mexico, Oklahoma, Rhode Island, Texas, Utah, Washington, and Wyoming. 2. Those in which dissection is legalized but only medical schools are entitled to cadavers. This class includes Connecticut, Colorado, District of Columbia, Georgia, Indiana, Kansas, Kentucky, Louisiana, Minnesota, Michigan, New York, Ohio, Pennsylvania, West Virginia. 3.

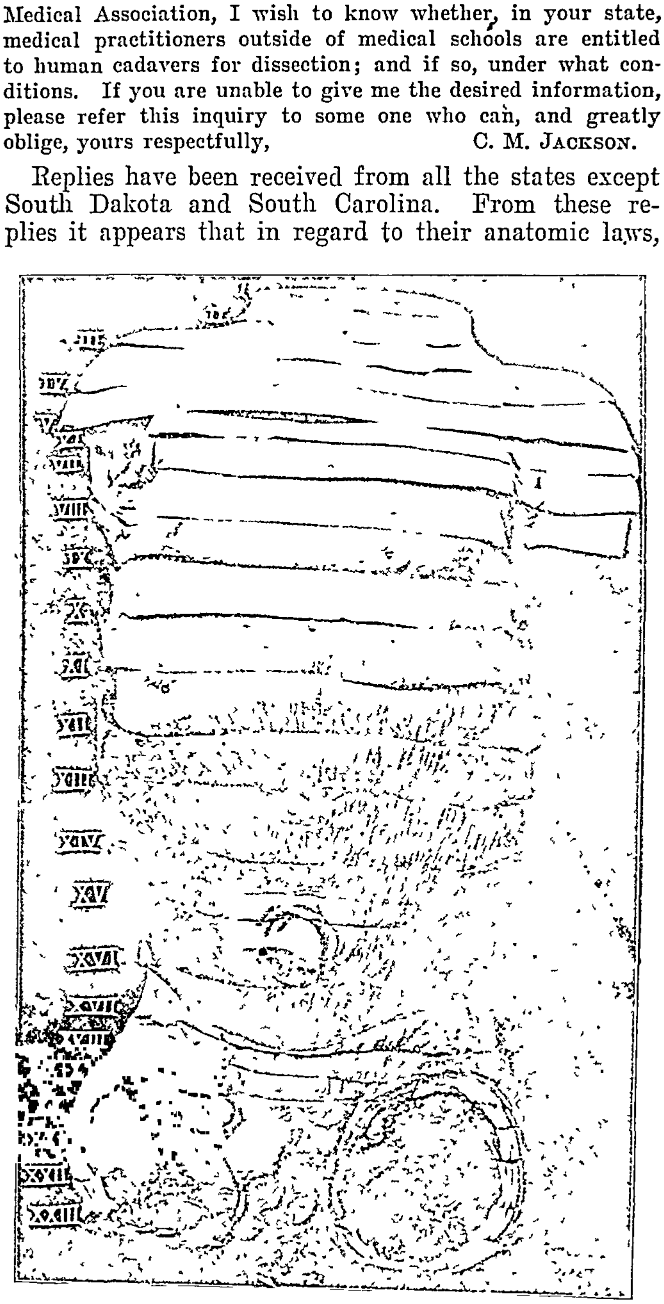

Fig. 1.—Full-term human fetus, hardened and sectioned by the formalin method. The photograph shows how perfectly the original form of the body may be restored by piling up the sections in their proper order.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

Those in which, under certain conditions, practitioners as well as medical schools are entitled to cadavers for dissection. This class includes California, Iowa, Illinois, Maine, Maryland, Missouri, Massachusetts, Nebraska, New Jersey, New Hampshire, North Dakota, Oregon, Tennessee, Vermont, Virginia, Wisconsin.

The restrictions under which practitioners may obtain cadavers vary somewhat in the different states. A bond is usually required to guarantee the use of cadavers for scientific purposes only. Most states specify that the needs of the medical colleges shall be met before cadavers are available for practitioners. No one, I presume would question the justice of this rule, since dissection is absolutely necessary in the medical schools. But the point to be emphasized is this: *The medical profession in every state should demand a law appropriating for anatomic uses all bodies to be buried at public expense.* This law, properly enforced, would secure an abundance of material for practitioners as well as for medical schools. The difficulty usually lies in the vigilance necessary to secure an enforcement of the law. It should be the duty of the physicians in each locality to see that the law is enforced, in order that sufficient material for all who desire it may be provided. An excellent provision in the New Jersey law requires physicians who wish to dissect to organize themselves into an anatomic and pathologic association (of three or more) for the advancement of medical and surgical science. The Wisconsin law provides that such work may be done under the auspices of the county medical societies, an idea which I shall discuss later.

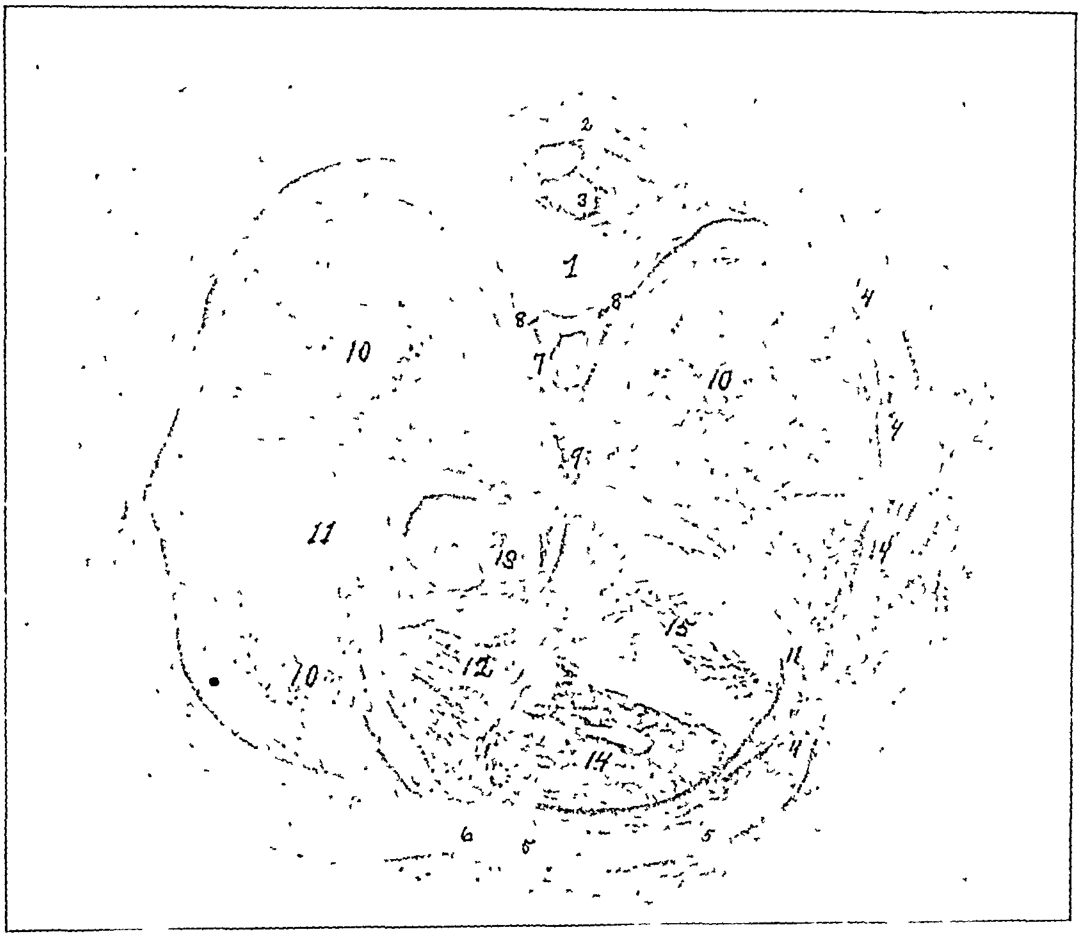

Fig. 2.—Cross section through the lower thoracic region of a full term human fetus Formalin method, decalcification and freezing Section viewed from above. Note the relatively large size of the heart. 1, Vertebral centrum; 2, neural arch; 3, spinal cord and meninges; 4, ribs cut across; 5, costal cartilages; 6, sternum; 7, thoracic aorta; 8, vena azygos, major and minor; 9, esophagus; 10, lungs; 11, dome of diaphragm; 12, right auricle; 13, entrance of inferior vena cava; 14, right ventricle; 15, left ventricle; 16, pleuro-pericardial septum.

USE OF FETUSES.

But are there no opportunities for practitioners who for any reason are unable to procure cadavers? There are many. First, let me call your attention to the neglected opportunities in the way of fetal specimens. Advanced fetuses are fairly abundant, easily preserved, and valuable for anatomic study. A full term fetus in many respects makes an excellent substitute for an adult cadaver. A careful study of such material is also of great value in demonstration of the anatomic peculiarities incident to infancy and childhood, a subject of especial interest to those concerned with diseases of children.

In passing, let me say that fetal specimens, especially the earlier stages, would be very thankfully received at almost any anatomic laboratory, in case the physician did not wish to keep them. Methods of preservation are given below.

Another source from which much valuable material may be derived for the study of normal and pathologic anatomy, especially of individual organs, is from specimens obtained at operations and postmortems. A little zeal combined with tact can accomplish a great deal in this line. Think of the amount of material which might be used for anatomic study, but which is thrown away and absolutely wasted. This state of affairs, I believe, is due largely to the fact that few practitioners know how to preserve properly and to make use of such material.

The remainder of this paper will, therefore, be devoted to the explanation of a few simple methods, which may, perhaps, be of some practical value. Of these, three will be given: 1, To preserve a cadaver for ordinary dissection; 2, to cut a body into sections for topographic study; 3, to preserve individual organs with their natural colors (Kaiserling's method).

PRESERVATION OF CADAVERS.

To prepare a cadaver for ordinary dissection, it should be embalmed by the arterial injection of some fluid which will preserve the body indefinitely, and yet retain as nearly as possible the natural consistency and color of the various organs. Many fluids are in use for this purpose, the best of which, in my experience, is the alcohol-carbolic acid-glycerin mixture. It is made by mixing together equal parts of strong alcohol (95 per cent), melted carbolic acid crystals and glycerin. The method of embalming is very simple. Cut down to an artery (common femoral preferred), and inject the fluid with any available injection apparatus. I have seen an ordinary rubber-bulb hand syringe used with perfect success. The main point is to keep up a strong pressure until the fluid has penetrated through the arteries to all parts of the body. It will require about an hour of time, and six to eight quarts of the fluid. After twenty-four hours, when the arterial pressure has gone down, a colored mass may be similarly injected. Equal parts of plaster of paris and starch, ground up with red lead, sifted carefully, and mixed with water to a thin paste makes a very satisfactory injection mass. Watch the cadaver closely for several days after embalming. If any part shows signs of decay (due to imperfect injection), give it local hypodermic injections of formalin (25 per cent.). After having been embalmed perfectly the cadaver will keep indefinitely. Drying is to be prevented by wrapping in waterproof cloths, or placing in an air-tight box or can. The great advantage of an embalmed subject is that you can dissect at your leisure, a point of no small importance to the practitioner.

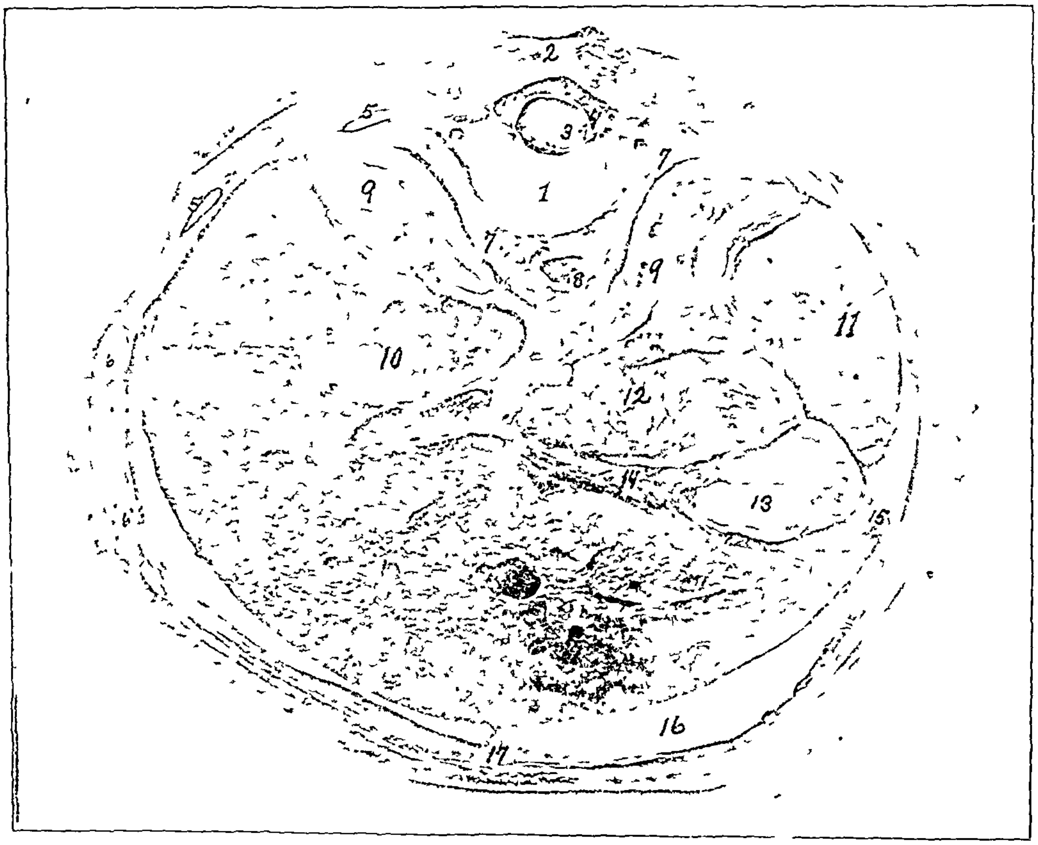

Fig 3—Cross section through the upper abdominal region of a full term human fetus Formalin method, decalcification and freezing Section viewed from above Observe the enormous liver, occupying more than one half of the entire section, and reaching almost to the spleen; the tubular stomach, in the triangle formed by liver, pancreas and spleen, and especially the relatively large suprarenal bodies, which at first glance might readily be mistaken for the kidneys 1, Intervertebral disc, 2, neural arch, 3, spinal cord, 4, spinal meninges, 5, ribs; 6, costal cartilages, 7, diaphragm; 8, aorta; 9, suprarenal bodies; 10, liver; 11, spleen; 12, pancreas; 13, stomach; 14, lesser omentum; 15, great omentum; 16, peritoneal cavity; 17, falciform ligament.

MAKING SECTIONS.

The second method, that of sectioning a body for topographic study, was given by me in a paper before this Association last year. The details of the method were published in THE JOURNAL Sept. 21, 1901, and need not be repeated here. Briefly, the method consists in the arterial injection of 50 per cent. formalin, which hardens the body so thoroughly that it can readily be cut, with a long knife and saw, into sections for study. By decalcifying in 5 per cent. hydrochloric acid for several weeks after hardening, even the saw may be dispensed with. The accompanying specimens show what can be accomplished by this method. Like the first method, it can be applied to advanced fetuses, in which case it is advisable to freeze the body (with salt and ice mixture) before cutting into sections. Figures 1, 2 and 3 are from specimens prepared in this way. The immense practical value to be derived from a study of the body sectioned in this manner needs no emphasis.

PRESERVATION OF INDIVIDUAL ORGANS IN COLORS.

The third method applies chiefly to individual organs or parts. The cheapest liquid in which to preserve such specimens is 5 per cent. formalin (2 per cent. formaldehyd), which costs only ten or fifteen cents per gallon. The following (Kaiserling's) method is more expensive and more tedious, but has the great advantage of preserving the natural colors of the various organs, both in normal and pathologic conditions.

Two separate fluids are required:

A.—FIXING AND HARDENING FLUID.

Formalin, (40 per cent. formaldehyd)	½ pint.
Distilled water	2½ pints.
Potassium nitrate (saltpeter)	2/3 ounce.
Potassium acetate	1¼ ounces.

B.—PRESERVING FLUID.

Potassium acetate	8 ounces.
Glycerin	1 pint.
Distilled water	5 pints.

The above amounts are sufficient for an organ of the size of the human liver.

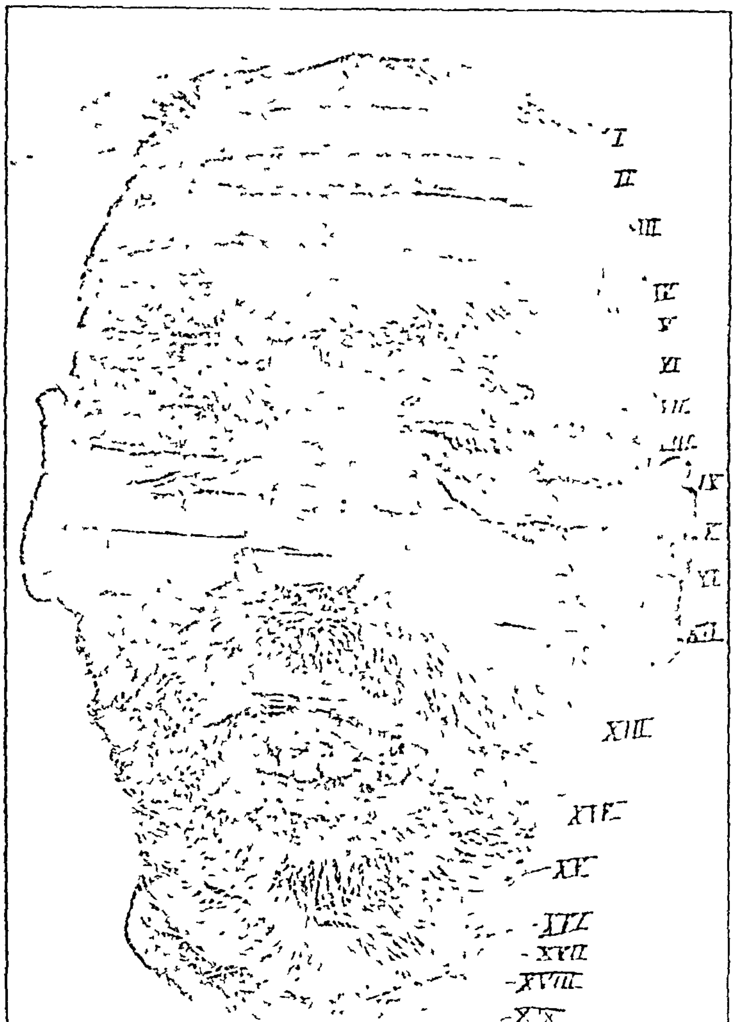

Fig 4—Cross sections of head and neck of an adult. Formalin method By this means the surface form and mutual relations of all the internal structures are made accessible for study.

The procedure is as follows: After removing the fresh organs, place them in a vessel on cotton, cover well with solution A and place in the dark for four to eight days, according to the size of the specimen. Liquid should be changed once after twenty-four hours. When thoroughly fixed and hardened. the specimen, after draining a few minutes, should be placed in 95 per cent. alcohol for a few hours (not over six hours), which restores the natural color. The specimen is then placed in a glass vessel containing solution B, which preserves it indefinitely. Specimens when not in use should be kept in a dark place, otherwise the colors are liable to fade out in time. Specimens preserved by this method may be dissected later, if desired.

MUSEUMS FOR SOCIETIES.

In conclusion, let me emphasize a point previously referred to. Why could not each local or county medical society establish an anatomic museum; not the old-fashioned curiosity museum, but a practical laboratory for working purposes, where specimens could be preserved and used to illustrate the normal and pathologic anatomy of all parts of the body? Some energetic and enthusiastic member could always be found who would be willing to act as curator. The society could take advantage of the law allowing scientific organizations to import glassware, reagents, etc., duty free, thus reducing the cost to a minimum. Would not a series of demonstrations from such a museum add materially to the interest and value of the meetings? The collection, even though small at first, would gradually increase in size and value by contributions from its members. Many specimens of practical value are now lying useless in nearly every physician's back office.

Lack of time prevents a consideration of many details, but I should be very glad to hear from anyone interested in this plan, and to give any further information possible which will aid in making it a success.

DISCUSSION.

Dr. Jno. B. Roberts, Philadelphia—I think Dr. Jackson is mistaken in regard to the Pennsylvania law. The medical colleges of Pennsylvania are supplied with material by a state anatomic board, and medical men, unconnected with colleges, may get anatomic material from this board whenever they desire. I am pretty familiar with the law for I was secretary of the committee which secured its passage, and have been for years a member of the board.

Dr. Frances Dickinson, Chicago—I would like to ask the Doctor if he has not found that the freezing of embalmed specimens destroys the effect of the preserving fluid to the extent that, on exposure for dissection, decomposition takes place more readily; also what color changes take place where he employs 50 per cent. formalin solution; are the different tissues readily distinguished?

He speaks of force being necessary in filling the arteries with any preserving fluid. In Harvey Medical College we have found that to simply take a two-gallon percolator filled with embalming fluid and hang it not necessarily more than one foot higher than the body that the embalming fluid, entering by way of almost any artery, will then gradually find its way to every tissue in the body. As to filling the arteries afterward with either starch or any other solid substance, one should not use a vegetable coloring matter; it is apt to spread into the tissues. Red lead for arteries is preferable. Shellac, starch and other substances are used for filling. Force is necessary in filling the arteries with solids. If there have been diseased arteries at any point one is very likely to rupture them. Soak sawdust with your embalming fluid and fill the chest cavity of postmortem subjects with it. This, with hypodermic injections of trunk tissues, will preserve the anterior walls of the trunk on which many operations, including hernia, can be well illustrated. Thus one can make much more use of these bodies than postmortem material ordinarily presents. As to covering the bodies with waterproof cloth, our experience has not been good. We tried paraffin paper at one time. We now paint the body with boiled linseed oil, cover with thin layer of absorbent cotton and bandage from head to toe. After bandaging the entire body it need not be left in the horizontal position, but hang it up with no fear of edema of limbs. Use small tongs similar to ice tongs in the ears and keep the body in the ordinary atmosphere without cold-storage or ice-plant and there will be no decomposition on exposure, if good fluids are used. We kept them in the horizontal position originally, but have finally taken to hanging them. It has seemed to us that freezing after embalming destroys the influence of the embalming fluid on the tissues when exposed for dissection. If for any reason the embalming failed I have noticed that a fly is rather prone to alight on that particular spot where decomposition is taking place. This body is immediately cremated. The room in which we keep our material is open, with no screens and no flies. In cases that have died with cavities in the lungs I would like to ask if it is not essential to close up the air passages, because the fluid gets into the lungs and out of the bronchial tubes to the upper air passages. I believe that all our schools can give their students very much better material, and no longer is it necessary to put on the table before any student any material in a decomposed condition or that will decompose on long exposure. The Harvey Medical College has for three years given its students no decomposing material.

Dr. W. T. Eckley, Chicago—The undertaker is the self-appointed enemy of anatomic laws in general and of the general practitioner. The law in the state of Iowa makes minimal preparations for burial the application of a shroud only. A floater coming down the river is brought ashore, when the undertaker's spy places a shroud thereon and it is thus rendered impossible for any college to claim that body thus prepared for burial. *I have known good men to be called bad* grave-robbers on account of this lax law. The law, it is true, may permit a physician to take an unidentified body, but the physician can not overcome public sentiment. The essayist misinterprets the facility of enforcing the anatomic law. The value of Dr. Jackson's transverse sections is great. We are in the habit of using similar specimens for class purposes and I can testify to what the Doctor has said as to their value in the class-room. As to the arrangement in connection with county medical societies, many interesting specimens may be collected. The preservation of bodies could readily be brought about by energetic young men who are scientifically inclined. I would like to suggest that he extend this embalming process to the domestic animals and present these also to rural societies.

Dr. Jackson, in closing—I am glad to learn that I was mistaken about the Pennsylvania law. I had the information from the Secretary of State who was probably mistaken. As to decomposition after freezing, I have not noticed any special tendency, provided the body has been thoroughly embalmed before the freezing. It is not necessary to have cold-storage in order to keep these bodies, although it is a very useful adjunct, especially in large schools. I have seen bodies preserved perfectly year after year without cold-storage. As to the color changes, these specimens speak for themselves. The color is much less injured by formalin than it is by alcohol. The different organs and the different tissues are well differentiated from each other. Seven or eight pounds' pressure is usually employed in filling the arteries. Low pressure is all that is necessary, but it must be kept up for a considerable length of time. Ordinarily, gravity pressure will be perfectly satisfactory. From 10 to 12 hours are usually necessary when low pressure is used. Put in all the fluid that can be injected with safety. Sometimes you will find, especially if the cadaver is decomposed somewhat before you get it, that the capillaries of the nose and mouth will rupture. They should be plugged with gauze until the pressure stops the flow of the liquid. Dr. Eckley's suggestion that we study the anatomy of the lower animals in the same way is a good one and material for such study is abundant everywhere.

Traumatic Diabetes.—In two cases of traumatic diabetes described by L. d'Amato in *Annali di Nevrologia*, xx, 1 and 2, the diabetes assumed a very severe form. One was a man of 52 who fell from a tree, the other a boy of 13 hit on the hand with a club. The diabetes mellitus observed was evidently nervous, that is, due to derangement in the action of the nervous system on the organs which regulate the combustion of sugar. The same alterations were found in the pancreas in both these cases, as in the so-called diabetes from atrophy of this organ. The microscopic alterations in the liver were *peculiar, differing from those observed in diabetes* or any other affection, as illustrated in the colored plates. The nervous symptoms included profound asthenia, apathy, incontinence and impotence, with abolition of the knee-jerk.

ACQUIRED NON-MALIGNANT STRICTURE OF THE RECTUM.—CAUSES, SYMPTOMS AND TREATMENT.*

W. DUFF BULLARD, M.D.
NEW YORK.

The position here taken by the writer was assumed by him first in an article published in the *New York Medical Record.* On that occasion he expressed the opinion that the "great majority of observers had been led to consider syphilis the causative factor in the production of rectal stricture by the fact that this condition has most frequently been observed in syphilitic subjects." Since that time he has become more thoroughly convinced of the correctness of this view, and he still believes that it is much more rational to assume that syphilis is not immediately responsible for such lesions. The following reasons appear to him to justify the stand he has taken:

Endarteritis is a well-recognized state in syphilis. This change in the vascular system, combined with the resultant low state of nutrition, renders the mucosa of the rectum less resistant to irritants and trauma. Under these circumstances small losses of the epithelial covering, which would readily be restored in healthy individuals, remain unhealed and constitute the beginning of simple inflammatory or ulcerative conditions. Examples of this are offered in the indolent healing of wounds and in the delayed union of fractures in syphilitic subjects.

Surgical operations within the rectum and in adjacent tissues are quite common causes of rectal stricture. Many such cases are reported as sequels to all types of operation, most frequently, perhaps, after surgical intervention in hemorrhoids and anal fistula.

Pessaries, glass enema tubes, a fall on the buttocks, bones, pins and foreign bodies of various kinds that have become impacted in the rectum, are all likely to cause ulceration and subsequent stricture.

In the writer's opinion, the primary syphilitic lesion occurs in the rectum only in victims of passive pederasty or otherwise as the result of direct contagion. There is very little destruction of tissue produced by chancre, and the tendency is for it to run its course to spontaneous healing in from four to six weeks. Mucous patches may also occur in the rectum as a secondary manifestation of syphilis. As is well known, the fauces and pharynx are the parts most frequently affected by this type of the disease. The symptoms here are more aggravated by irritants, such as tobacco, alcohol, etc. Men are more subject to these irritations. Why should the female rectum be the structure in which the mucous patch proceeds to stricture, while the male organ escapes? Let the syphilographer tell us how many patients suffer from symptoms of ulcerated mucous patches in the rectum at this stage of syphilis. The writer believes their answer will be that no case showed symptoms of rectal disease which were not present before the syphilis was contracted.

Tertiary lesions and the ano-rectal syphiloma of Fournier are looked upon by most authorities as the cause of most non-malignant strictures of the rectum. The ano-rectal syphiloma is supposed by them to be a diffuse infiltration of all the lower part of the rectal wall, causing an hypertrophy which encroaches upon *the lumen of the canal.* It is the writer's opinion that, although such a process occurs, it is neither caused by, nor characteristic of, syphilis. On the contrary, in his opinion, it is due to chronic local irritation, or more frequently to external causes, such as will subsequently be described under the head of stricture from cellular deposit.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and Willard.

In regard to the occurrence of circumscribed gummatous swellings in the rectal wall, as several authorities claim, there seems to the writer to be no reason why such deposits, if they do occur, should not be as readily influenced by anti-syphilitic treatment as they are in other parts of the body. Since authorities state that they do not respond to specific treatment, the writer believes it is safe to assume that no lesion in the body is syphilitic that does not yield to specific medication; indeed, he would go further and say that he is convinced that syphilis *per se* is not a causative factor in stricture of the rectum. The more frequent occurrence of stricture in the female rectum can, he believes, be accounted for on the basis of the greater liability to traumatism to which the latter is exposed. Every coitus and every pregnancy affect the rectal wall, and every inflammatory process in uterus, tubes or ovaries may exert a pernicious influence.

The varieties of lesions that tend to produce stricture of the rectum may be divided into two large classes:

1. Lesions external to the bowel, producing mechanical obstructions and circulatory disturbances resulting in involvement of the rectal wall.
2. Lesions originating in the wall of the bowel itself.

LESIONS EXTERNAL TO THE BOWEL.

As has already been indicated, lesions external to the bowel operating to produce rectal stricture are of more frequent occurrence in the female than in the male subject.

This is undoubtedly due to the fact that in the former the rectum lies in closer proximity to the organs of generation, which are more subject to radical changes than in the latter. Disease of the vulva or vagina, as manifested in the cicatricial contraction following old non-syphilitic ulceration, chancroidal disease, extensive gonorrheal inflammation, and, most common of all, traumatisms, as illustrated by the ruptured perineum, directly affect the rectal wall. Enlargement of the uterus in pregnancy or any disease of the adnexa, if allowed to progress, interferes with proper performance of the rectal functions. Pressure is exerted upon the elastic rectal wall, thereby producing a rounded spur which projects into the lumen of the bowel. If there be added to this a constipated habit and the straining necessary to force the hardened feces beyond this spur, the continuity and integrity of the rectal wall are menaced. This condition, if unrelieved, obstructs the circulatory efforts of nature which are essential to the sustenance of the mucosa. The mucosa gradually loses its elasticity and vitality, until, by constant irritation, the stools erode the epithelium covering the spur. Ulceration now takes place, and the steps between this stage and stricture of the rectum are short.

This sequel can, perhaps, most frequently be observed in patients suffering from adherent retroflexed uterus; but it may also result from the action of any mass encroaching upon the normal caliber of the rectum. Nature, apparently realizing the dangers to which the rectum is exposed, endeavors to overcome them by dilating the canal into what is called the "rectal pouch." If, however, this "rectal pouch" is surrounded by a plastic exudate from a contiguous pelvic peritonitis, cellulitis, periprostatic or pelvic abscess, the power of adapting itself to the mass of feces is lost. Under these circumstances the pressure necessary to push a stool beyond the obstruction may be likened to an attempt to force semi-fluid material through an old stiffened section of rubber hose having a partial kink in its caliber. Dilatation occurs above the kink until sufficient pressure is exerted to force a passage or to burst the tube. The inflammatory deposit may so interrupt peristaltic action as to give rise to obstruction.

Stricture resulting from such a condition is likely to consist of an hypertrophy of all the walls of the bowel for three or four inches above the point where the lumen of the gut is encroached on by the inflammatory deposit. This results from Nature's efforts to force the contents of the rectum through the adherent and obstructed portion of the bowel. Later, when dilatation results from constant pressure above, ulceration and pocketing occur. This is observed only in those well-advanced cases in which treatment had not been applied or in which the real trouble had not been recognized.

Chancroids frequently occur at the anal margin and cause fissures and ulcers about the anus. The author, however, does not believe that they are the cause of stricture except in those cases in which the action of the sphincter is impaired or in which they are allowed to progress to the phagedenic type, and the induration that follows such an extensive process causes a migration of leucocytes into all the neighboring tissues that later become organized into firm tissue. The function of the rectum is to expel all irritating substances and not to draw them in. If chancroidal poison were carried directly into the rectum, we surely would find that nearly every prostitute had a stricture of the rectum.

LESIONS OCCURRING IN THE RECTAL WALL.

Tuberculosis is sometimes the cause of stricture of the rectum. The rectum is rarely the primary focus of the disease, but when the system is lowered by tuberculosis of the lungs or the like, the bacilli find a *locus minoris resistentiæ* in the perirectal tissue or in the folds of the mucous membrane itself. If they lodge in the perirectal tissue, a tuberculous abscess is formed with subsequent ulceration and stricture. If the mucous membrane is first involved, then ulceration at once begins and spreads rapidly, leaving areas of indurated and granulating tissue. This ulceration is most intractable to all forms of treatment, and the infiltration of the rectal wall results in a wide, dense stricture composed of fibrous bands and large areas, the seat of ulceration. The diseases of the colon, such as dysentery, typhoid, amebic colitis, etc., produce ulceration in the rectal wall as elsewhere in the alimentary tract. These ulcerations may not heal readily, and a fibrous stricture results.

In the writer's opinion, gonorrhea exerts no influence in the formation of stricture of the rectum except from direct contagion.

Hemorrhoids is a lesion that exerts the most potent influence. The varicosities, when they become engorged, inflamed and strangulated, obstruct the passage of stools. They may slough off the surrounding tissue. The ulcer thus left is generally at first superficial and of little consequence; but if left neglected it gradually extends through the whole mucous membrane to the submucous layer of the rectal wall. A partial stricture is likely to result from subsequent cicatrization.

Abscess and fistula-in-ano are the most common diseases of the rectum. Abscesses usually press upon the rectal wall, as is shown by the excruciating pains suffered by the patient at stool. If the abscess ruptures externally, then small damage is done to the rectal wall. If the abscess discharges internally, a marked ulceration occurs about the opening from the irritation of the infective material carried over its surface by the feces. Granulation of the abscess cavity takes place and frequently results in the formation of a large, soft mass of exuberant granulations protruding in the rectal caliber. This mass causes a necrosis of tissue in that part of the rectal wall contiguous thereto. These strictures are soft, prone to hemorrhage and easily dilated under appropriate and judicious treatment.

Prolapse of the rectum, especially when it originates in childhood, tends to narrow the rectal canal as the result of the thickening of all its walls incident to its repeated fall and reduction, and thus causes stricture.

The symptoms occasioned by stricture of the rectum can be discussed in two classes: 1. Before ulceration occurs. 2. After ulceration occurs.

SYMPTOMS BEFORE ULCERATION.

Stricture of the rectum presents very few symptoms before ulceration takes place. Alternating constipation and diarrhea, a sensation of fulness in the abdomen and of weight in the pelvis, may be all that is present. Every physician should feel that such a condition, not responding to the usual treatment in such affections, is sufficient to call for a careful and thorough rectal examination. Occasionally a patient will not present even so many symptoms as above mentioned. The only trouble that would attract attention to the rectum as the cause of difficulty may be a slight throbbing pain at the anus and a feeling of nausea after stool. The stools of a patient suffering from stricture of the rectum are necessarily different in character from those occurring in the healthy subject. They usually consist of small, hard, rounded lumps of fecal scybala not unlike a number of grapes separated from the common stalk. The so-called ribbon-shaped stools are rarely seen, and then only in those cases in which the stricture is at the anus or is forced down to it by the act of straining. They are of little diagnostic value, as they may be caused by a spasmodic contraction of the sphincter when no stricture is present. As the stricture becomes dense, and the tissue organized into fibrous bands, the symptoms become more severe. There are now distension of the abdomen, impairment of digestion, eructation of gases, and distress after eating. Fecal masses can be felt in the transverse and descending colon. The patient now begins to suffer from tenesmus, and is obliged to go to stool time after time to pass but a few lumps of fecal matter and an excessive amount of muco-purulent material from the irritated mucous membrane of the bowel. The fecal masses begin to act as foreign bodies and cause a catarrhal inflammation of the whole intestinal canal, with its attendant mucous discharge and septic absorption.

Relief is temporarily obtained from the use of cathartics, but the process repeats itself again and again, exhausting alike the patient and the intestinal functions. If the patient become constipated, acute obstruction may occur and a fatal issue result, unless operative interference is at once instituted. This is more likely to occur if the stricture is in the sigmoid or high up in the rectum, where the intestine may twist on itself in its peristaltic efforts to push the obstruction onwards, than if it were low down in the rectum where all the force is concentrated on a mass held steadily in position by the surrounding organs and a tight meso-rectum.

SYMPTOMS AFTER ULCERATION BEGINS.

The author believes that, as a rule, ulceration is the first step in the production of a stricture of the rectum, and consequently cases with as obscure symptoms as detailed above are the exception and not the rule.

The symptoms of ulceration of the rectum should at once attract the attention of the physician. Pain, muco-purulent discharge and tenesmus are characteristic. The patient is called to stool any number of times in twenty-four hours, to pass only a few scybala surrounded by a quantity of slime and muco-purulent material streaked with blood. If the patient consults a physician when these symptoms are first noticed and proper treatment is instituted, he should be cured and the sufferer thus protected against the formation of stricture of the rectum. Only too frequently, I fear, the general practitioner prefers to temporize with a serious condition that needs the care of a specialist as much as does a new growth of the larynx. An ulcer of the rectum will rarely respond to internal treatment, even if it is supplemented by the use of an occasional suppository. Treatment locally to the diseased area, and that alone, is essential. A few additions to the physician's regular armamentarium and some training should suffice to render local treatment of an ulcer of the rectum possible in a practitioner's office. The result should be nearly as satisfactory as is the treatment of an ulcer anywhere on the limbs or body, instead of being a *"bete noir"* as now.

The writer believes that nonmalignant stricture of the rectum would become a rare condition instead of a comparatively common one could the general profession be brought to realize the importance of local treatment and apply it in ulcer of the rectum. If the ulceration is neglected, it gradually extends, the symptoms grow more severe, and the patient becomes exhausted from the constant drain on the system and the tenesmus. Nature endeavors to remedy the evil and cicatricial bands and inflammatory deposit narrow the rectal caliber. Then appear the symptoms of deranged intestinal functions, the abdominal soreness and pain, distention, eructation of gases, nausea, occasional attacks of vomiting, localized areas of peritoneal inflammation surrounding the diseased mass, chronic obstipation and septic absorption, until the patient succumbs to acute obstruction or exhaustion.

DIAGNOSIS.

The presence of stricture of the rectum can easily be discovered if the physician understands the use of the numerous instruments at his disposal. The Kelly tube and Kelsey's modification of the same can be used to explore for stricture as high as the middle of the descending colon. Great care should be taken not to attempt to force any instrument by an obstruction. The instrument should be removed and an attempt made to pass a soft-rubber bougie. It is better at first to use a large size, a No. 8 or 10. This large size will distend the folds of mucous membrane. If this soft instrument seems to catch, some soap suds or olive oil should be injected through the opening in the center of the bougie and another attempt made very gently to pass the bougie onward. If resistance is still met with, there is very good reason to believe some obstruction exists. The bougie should be removed and notice taken how many inches of it were introduced before the obstruction was reached. A Kelly tube may then be introduced about the same distance as the bougie, its obturator removed and with the assistance of an electric headlight the distal end of the stricture can easily be observed and its caliber accurately measured. A hard-rubber olive-headed bougie on a small flexible metal stem can then be introduced through the tube directly into the lumen of the stricture. It is not desirable for diagnostic purposes to force a large size through the stricture. It is safer to pass one that is nicely adjusted to the lumen of the stricture. By this means the depth of the stricture and any excessive narrowing of its caliber higher up can readily be determined. The resistance to the return of the bougie after it has passed the upper limit of the stricture determines its proximal end as readily as in the case of a urethral stricture. With some experience the operator can detect the exact nature of the stricture, whether of a dense fibrous type or of partially organized tissue with an excessive amount of ulceration. The metal stem on the bougie employed by the writer is very small. As soon as the olive head has been introduced into the stricture the walls of the stricture can be perfectly viewed through the tube as they are gradually distended by the onward passage of the bulbous head.

TREATMENT.

The treatment of these strictures should be governed by the peculiar conditions present in each individual case. When the stricture is found to be quite wide and thick and of large caliber, with considerable ulceration, the treatment should be directed toward curing the ulceration.

Stimulating, cauterizing and protective applications should be made directly to the ulcerating areas. Healing will usually attend the conscientious and skilful use of such applications. The inflammatory deposit about the stricture, which is constantly increased by the irritation of infective materials on the ulcers, will begin to be absorbed, and the bowel wall will become less rigid and more amenable to gradual dilatation. As soon as the irritation is overcome Nature will cause the disappearance of a surprisingly large amount of this partially organized material. Just in proportion to the physician's success in overcoming this irritation and infiltration of tissue is the prognosis good or bad. The longer the duration of the disease the more fully organized the tissue will be and the less will it respond to the efforts of Nature to absorb it. The prognosis, then, in an old case should be guarded as to complete or rapid recovery. The author believes that the vast majority of cases in which the patient is not already suffering from chronic obstruction, when first seen, can be made more comfortable by the above briefly outlined treatment than by any operation at present at our disposal. When the disease has progressed to such an extent that the stricture is of a very narrow caliber, the patient greatly reduced and suffering from chronic obstruction. radical treatment is at once demanded. Here operation is the lesser of the two evils.

There are several classical methods to relieve these advanced cases. It is not the author's intention to give a description of these operations here, as they have been fully described in numerous works on general surgery, as well as in several works devoted entirely to rectal diseases.

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DISCUSSION.

Dr. W. J. Means, Columbus, Ohio—The etiology and symptoms of non-malignant stricture of the rectum are pretty well understood. How to permanently cure stricture is a problem that is far from being settled. Various operative procedures have been devised and advocated, but experience has shown their inefficiency to produce permanent results. Linear proctotomy, either external or internal, just as the case demands, seems to give the best results. My observation has been that good results can be obtained in some cases by making the incision obliquely through the tissues instead of at a right angle as taught by some text-books. If the stricture is low in the rectum, the margins of the incision after divulsion can be closed with fine catgut sutures. This does away with the raw surface that has to fill in by granulation. If it is necessary to make an external proctotomy, the fibers of the muscles should be divided in the same manner. If there are no contrary indications the ends of the fibers can be sutured after divulsion and the raw surface covered. It is the same method used in the division of tendons.

Dr. D. C. Hawley, Burlington, Vt.—A satisfactory classification of the strictures of the rectum is not easily made. The statement that syphilis has very little bearing on the question I think is correct. In conditions of irritation, inflammation or ulceration of the rectum, in which syphilis exists in the patient, it may be a factor, but is not the main factor in the case. It is important in the consideration of the etiology of rectal strictures to bear in mind that they are not cured nor much affected by specific treatment. Judging from my experience the majority of strictures of the rectum, including those referred to by the author as due to traumatism, may be called inflammatory. The two principal symptoms of rectal strictures are obstipation and ulceration followed by diarrhea. Stricture may be most easily diagnosed by digital examination if it is not situated too high up in the rectum, but if it is beyond the reach of the finger, the method which has come lately into use, called proctoscopy, is valuable and one which may give us very early information. Two methods of treatment only have in the majority of cases been satisfactory to me, viz., dilatation and posterior proctotomy.

PATHOLOGY OF UVEITIS.*

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Properly speaking, the term uveitis should be applied to an inflammation of any portion of the uveal tract which embraces iris, ciliary body and choroid; and an inflammatory process in any one of these structures, if severe and protracted, may involve the other divisions. Hence we frequently have cyclitis and choroiditis associated with severe iritis, if not caused by it, and likewise in suppurative choroiditis and even in certain types of protracted plastic choroiditis the iris and ciliary body become affected.

Thinking it better to limit the subject, this paper will consider particularly lesions of the choroid.

CLASSIFICATION.

A satisfactory pathologic classification of the forms of choroiditis is difficult, for although we recognize that these forms differ as to their etiology, the situations of their lesions, and their clinical appearances, yet their pathologic anatomy is by no means so varied. However, the usual division into purulent or suppurative choroiditis and plastic choroiditis seems a simple and convenient one. Whether or not we should add to this a third division, namely, serous, to explain some of the insidious, slow forms that so frequently have associated with them so-called serous inflammation of the ciliary body and iris, together with slight changes in the vitreous, is a question. It would seem to be simpler to omit this and consider them all as belonging to one of the two divisions, suppurative or plastic. Undoubtedly the liability of this part of the uveal tract to any form of inflammation is largely due to the extraordinary richness of its capillary system, which even exceeds that of the alveoli of the lung. It is estimated by Vierordt and by Wedl and Bock that the blood current of the choriocapillaris as compared with the arteries that supply it is enlarged more than thirty-two times, and in consequence of this the current is markedly reduced, both in velocity and strength. Every active hyperemia of the arteries and every passive congestion of the veins of the eye must make itself felt in the increased tension of the choroid. Again, should there be any change in the tunica intima or the vessel walls because of the circulation in the blood of any deleterious substance, this slowing of the current would encourage the heaping up of leucocytes on the walls and diapedesis into the tissue outside the vessels. This peculiarly bountiful arrangement of the vessels must be an important factor in the pathology of the choroid, and we can understand why many of the lesions have their beginning in the innermost layers.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

THE SUPPURATIVE FORM.

In acute suppurative choroiditis there is at first a rapid infiltration of the vascular layers of the choroid with round cells. The vessels become blocked with emboli and thrombi. The external layers and the suprachoroidal space are distended by a fibrinous exudation. The accumulation of pus cells beneath the lamina vitrea lifts up the retina, which soon becomes involved in the inflammatory process and its elements break down. The vitreous becomes turbid. Intraocular pressure is increased. As the severity of the inflammation increases the infiltration works its way forward to the ciliary body and the iris. Exudate appears in the anterior chamber. Marked congestion of the anterior ciliary veins occurs because of the interference of the circulation, and pronounced edema of the conjunctiva, orbital tissues and even the lids results, giving us the well-known appearances [illegible] The tissue of the sclerotic coat may [illegible] and softened and by rupturing allow the escape of the purulent, disintegrated contents of the globe. Usually, however, it is the cornea that first gives way. The organization of inflammatory products beneath the capsule of Tenon attach it firmly to the sclerotic and obliterate Tenon's space, and masses of new, firm connective tissue develop around the eyeball. The disease is a septic one and usually some variety of the pus formers may be demonstrated.

Most of the cases are of traumatic origin, but in some of them the infection may be metastastic, as in postpartum choroiditis coming on as a result of puerperal septicemia, which frequently proves fatal. In these cases bacterial emboli in the choroidal vessels or even in the retinal vessels are the starting point of the rapidly destructive inflammation. These cases are frequently associated with ulcerative endocarditis and multiple abscesses in other organs. A form of suppurative choroiditis, probably metastatic in origin, running a sluggish course and not resulting in destruction of the eye, is known as pseudo-glioma. It occurs in very young children, usually under three years of age. There is usually a history of preceding meningitis or of bronchitis or some exanthematous disease. In one case I saw the trouble follow an attack of mumps. The vitreous chamber fills up with a mass of exudate, which may be seen through the pupil lying up against the back part of the lens. The retina may or may not be detached. The choroid is thickened and sometimes shows thrombosis of the vessels and hemorrhages into its substance. In other cases no marked lesion of the choroid is present and the exudate seems to come from the ciliary body. These eyes are frequently removed with a diagnosis of glioma.

PLASTIC CHOROIDITIS.

In considering the clinical forms of plastic or nonsuppurative choroiditis, most authors describe them under the headings, disseminated choroiditis, areolar choroiditis, central choroiditis, choroido-retinitis and anterior and posterior sclero-choroiditis. While the different situation of the lesions and the varied ophthalmoscopic appearance make it possible to differentiate these forms clinically, so far as their pathologic anatomy is concerned, at least of the disseminated, areolar and central forms, they are very similar. Examination of such a choroidal lesion at the beginning, will show the capillaries enlarged and surrounded with leucocytes These round cells, together with amorphous fibrinous exudation, become heaped up in a mass in the layer of the chorio-capillaris beneath the vitreous membrane, which may be slightly raised by the pressure of the exudate. The capillaries are engorged with blood. The pigment layer of the retina remains intact. Seen with the ophthalmoscope at this stage, this mass may look like a small yellowish-red patch, not raised above the surface of the choroid. Such patches are at first discrete, but contiguous ones may coalesce to form larger patches of more irregular shape. As the case progresses these exudation masses are either absorbed or undergo in part organization, so that new cicatricial tissue takes the place of the mass of exudate, and the choroidal tissue atrophies. The elements of the pigment layer of the retina now proliferate, the layer of rods and cones is destroyed and pigment masses may be found in the outer layers of the retina itself, as well as in the margins of the choroidal area because of the proliferation of the pigment cells of the choroidal stroma. In the severer cases the retina becomes adherent to the atrophic cicatricial patches by the growth of the radial fibers outward into the choroid, so that a depressed cicatrix of the retina and choroid results. This cicatricial tissue in the choroid is illustrated in a case that recently came under my observation.

NARRATION OF CASE 1.

Case 1.—John L., a strong, healthy young farmer, 22 years old, was seen by me in March of this year. The only illness of any note in the personal history was typhoid six years ago. No history of syphilis or rheumatism.

Eighteen months before I first saw him, without any assignable cause, his vision failed rapidly so that in thirty-six hours after the onset he stated he was unable to read. Then vision gradually improved so that when first seen by me, R. V.=20/200; L. V.=20/50. There was a central choroiditis in each eye with irregular patches of choroidal atrophy and whitish masses of new connective tissue in the choroid with masses of pigment interspersed.

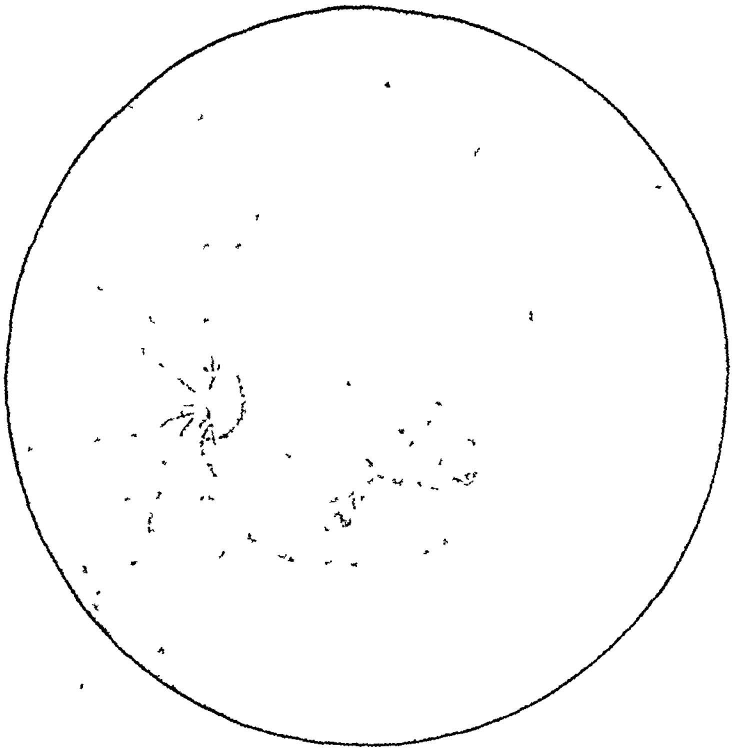
He was put on large doses of iodid of potassium and at the time of his discharge, May 29, 1902, R. V.=20/50; L. V.=20/20. The condition of the fundus is shown in the drawing, for which I am indebted to Dr. Chas. H. Beard of Chicago.

The vitreous becomes cloudy from small particles of exudate and round cells that find their way into it. At this stage the ophthalmoscopic appearance is pronounced. Larger or small irregularly-shaped whitish patches more or less completely surrounded by black borders, interspersed between which are irregular masses of pigment scattered throughout the choroid, make up the picture of disseminated choroiditis. The peripheral portions of the fundus may be most affected, or this may be free, and the posterior central part may be the seat of the lesion.

The form described by Förster as areolar choroiditis differs in no way from the preceding, pathologically. The mass is made up of cellular elements aggregated in a thickened choroid. There is, however, a proliferation of the pigment layer of the retina, so that with the ophthalmoscope there seems to be at first merely a round or oval mass of pigment. Gradually, with the absorption of the exudate, there is seen the characteristic circular atrophic area surrounded by a ring of pigment.

The diseased patch is sharply differentiated from the normal choroid. The posterior pole of the eye is the part preferably selected, although the region of the yellow spot may escape for a considerable time, it may be years, to be suddenly involved. In consequence of this, central vision may remain good, although perimetric examination of the field will reveal numerous scotomata corresponding to the site of the choroidal lesions.

It is more than probable that the outer layers of the retina derive their nourishment from the capillary layer of the choroid, and for this reason, inflammatory processes in the latter often involve the retina



Case 1.—John L Left eye. Erect image

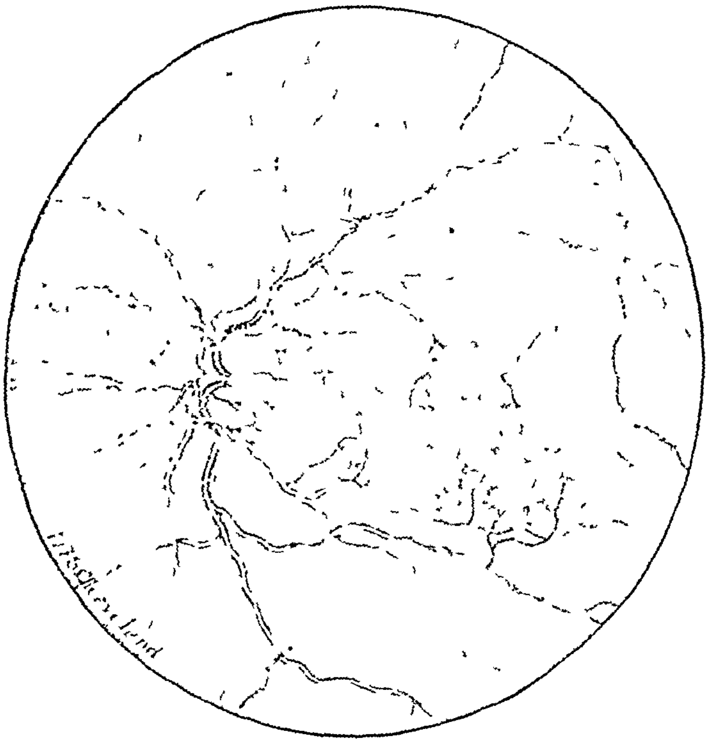
We may have a diffuse or a circumscribed choroido-retinitis and, if the region of the macula is the part particularly affected, the term central choroido-retinitis is applicable.

The pathologic process in these cases is similar and consists in a parenchymatous infiltration of the choroid, which later involves the retina, causing a destruction of the pigment and bacillary layers. Degeneration of the connective tissue of the retinal layers follows, and atrophy of this structure. Immigration of pigment is noticeable in surrounding areas of the retina, this pigment being arranged along the retinal vessels, but not covering them as in pigmentary degeneration of the retina (*retinitis pigmentosa*). Opacities, at first small, dust-like spots, later larger masses, are seen in the posterior part of the vitreous and obscure the optic disc and vessels. These are more marked in the diffuse form and are said to be always present in the syphilitic form of the disease and to be one of the earliest signs.

According to Schöbl, the vessel walls are thickened sometimes to the extent of obliteration of the lumen, and evidences of endarteritis exist in marked swelling of the *tunica intima*. Ophthalmoscopically the retinal vessels are seen to be markedly narrowed and in places obliterated. The appearances vary according to the situation of the lesions, the intensity of the inflammation, the stage of the disease and the presence or absence of proliferation in the choroid. A case of central choroido-retinitis that has been under observation for three years, in which there is absolutely no history of syphilis, passed through this course and has resulted in almost total loss of central vision.

NARRATION OF CASE 2.

Case 2.—Mrs. W., aged 46 years, was first examined by me April 4, 1896. She had slight hyperopic astigmatism in each eye, the correction of which gave normal vision. Media and fundus at the time were normal. Somewhat more than one year later she noticed dimness of vision of left eye, and examination revealed the faintest possible opacities of the vitreous which reduced the vision to 20/30. No change in the fundus. One year later these opacities had somewhat increased and a slight grayish appearance of the fovea was noticed. Vision in that eye had fallen to 20/50. Two months later L. V.=20/100 and the grayish spot exactly in the fovea had grown a little larger. The trouble gradually increased until one year later, Jan. 10, 1900, L. V.=20/200. The vitreous opacities were no more numerous, but there was more change in the yellow spot region. *From this time on the central vision became more and more impaired until it reached zero*, while the fundus assumed the appearance shown in the drawing, which was made a few days ago.



Case 2.—Mrs W Left eye Erect image Drawn May 25, 1902

The patient had some rheumatic or gouty tendencies, not well-marked, however, and was passing through the menopause. The right eye has remained normal.

SCLERO-CHOROIDITIS.

On the edges of the conus found in high degrees of progressive myopia are found distinct signs of inflammation of the choroid. There is a proliferation of the pigment cells on the edge of the affected area and the pigment is heaped up in masses. The capillaries are closed and even disappear. There is an infiltration into the layers of the choroid and even into the sclerotic, the fibers of which become atrophied, so that because of the thinning of the sclera, ectasia may occur. The epithelial cells of the retina disappear over the conus and the layer of rods and cones is not seen over this area.

With the increase of the myopia the atrophy extends to the nasal side of the optic disc and forms a complete ring around it. In advanced cases the changes about the yellow spot speak for an inflammatory condition. Numerous whitish lines and spots of exudate, together with small hemorrhages, are sometimes seen.

Schnabel contends that the appearances of the conus in high degrees of myopia are not due to inflammatory changes, but that they are congenital defects. According to this author, the bacillary and pigment layers were never formed over the area of the conus, and so could not be drawn away.

I have several times observed cases of localized choroiditis with descemetitis similar to the anomalous forms described by Hill Griffith. In these there was dimness of vision coming on suddenly. Examination showed distinct spots on the posterior surface of the cornea, but there were no signs of iritis or irido-cyclitis. In other cases, however, there were iritic complications and also dust-like opacities in the vitreous, so that I am inclined to believe that in most cases where descemetitis is present there is some involvement of the anterior part of the uveal tract. In both choroido-retinitis and central choroiditis I have observed that opacities of the vitreous, so faint as to escape a hurried examination without mydriatic, precede the manifest choroidal lesion, even in cases that are clearly nonsyphilitic.

THE TREATMENT OF CERTAIN NON-SPECIFIC LESIONS OF THE UVEAL TRACT WITH PILOCARPIN AND SWEAT BATHS.*

THOMAS A. WOODRUFF, M.D.
CHICAGO.

The pilocarpin sweat is by no means new in the treatment of diseases of the eye. About 1877-78 we first find mention made of its having been successfully used in various inflammatory affections of the interior of the eyeball. Since that date the literature of the subject is quite extensive. Several authorities, among whom may be mentioned De Wecker and De Grandmont, early recommended its use for the absorption of opacities in the vitreous and of inflammatory products in the choroid. During the succeeding years we find a number of articles contributed by men of good repute who speak highly of the use of the drug, not only in the diseases of the uveal tract, but in detachment of the retina and in optic neuritis and reports of cases in which marked benefit has been derived from its use. While in some cases the pilocarpin was given by the mouth, the majority of observers prefer its hypodermatic administration. In some cases the drug was used alone, while in others it was used in conjunction with mercurial inunctions, potassium iodid, etc., and then without particular regard to the character—specific or other—of the intra-ocular lesion.

THE SCOPE OF THIS ARTICLE.

It is not the purpose of this paper to advocate anything new, but once more to draw the attention of this section to a valuable method of treating certain diseases of the uveal tract that seems to have fallen into desuetude. I shall confine my remarks to a consideration of certain affections of the posterior segment of the eyeball, and shall describe that method of employing it which, in my hands, has been followed by good results, not only in bringing to a standstill the degenerative process that has been going on, but in a number of cases clearing up the inflammatory products and restoring the tissues involved to a normal or nearly normal condition. Although disturbance of the general health is a frequent cause of non-specific lesions of the uvea, the patient giving a history of tuberculosis, anemia, etc., in many instances the chief etiologic factors are shrouded in mystery, the product of infection, when it is due to an infective process, being probably carried by the blood vessels. Although the uveal tract is abundantly supplied with blood vessels, the circulation is at the same time very sluggish and there is probably no other part of the body so prone to inflammatory and degenerative changes.

TECHNIC OF THE SWEAT BATH.

Many lesions of the choroid and ciliary body are in their nature irreparable, but a large minority are capable of some improvement. Notwithstanding the claims of many recent remedies, for example, the internal administration of thiosinamin, subconjunctival injections of mercury, etc., none of them give as good results in selected cases as the judicious use of the hypodermic injection of pilocarpin hydrochlorate in doses of one-eighth to one-quarter of a grain in conjunction with the sweat bath and the internal administration of potassium iodid. The iodid should be given in increasing doses in a large quantity of water until toxic symptoms appear. Although pilocarpin is by no means a new remedy, yet sufficient emphasis has not been placed upon its extreme value in certain deep lesions of the eye. Especially is this true in subacute and chronic choroiditis, hyalitis and opacities in the vitreous.

As the hypodermics and baths should be given when the stomach is empty, there being less danger from the untoward effects of pilocarpin at that time, they are best administered the first thing in the morning. The patient should be in bed and wrapped up to the neck in a blanket and again covered with at least four blankets. Under the latter half a dozen quart bottles containing boiling hot water should be placed. The hypodermic injection of pilocarpin hydrochlorate beginning with one-eighth of a grain should now be given, at the same time having the patient drink at least a pint of hot water, weak lemonade or tea. In a few minutes the patient should begin to break out into a profuse perspiration, which should continue for at least two hours, only stopping short of that time if he shows any bad symptoms. At the end of the sweat he should be thoroughly dried and the skin rubbed with alcohol and then allowed to rest the remainder of the day. This treatment should be continued at least every other day until twelve such baths are taken. At an interval of two or three weeks a similar course of treatment should be repeated, and then continued at various intervals as long as any improvement takes place.

INDICATIONS FOR USE.

In choroiditis, particularly of the exudative variety, I have found the administration of pilocarpin sweats very useful in the early stages before there is any involvement of the retinal elements and before the choroidal pigment has become absorbed. The drug seems to have a beneficial influence in the resorption of the choroidal exudates and allowing the affected tissues to resume their activity. In the more advanced stages of the disease where choroidal atrophy has already taken place, very little improvement of vision can be expected, but even in such cases the further progress of the disease may be checked and the patient retain useful vision. I think under such a course of treatment, before the choroid has been destroyed by atrophy, that we can safely encourage the patient in the hope of a favorable termination of his symptoms.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Wurdemann and J. A. Lippincott.

In vitreous opacities the results I have obtained in a number of cases by such a treatment in producing absorption of the opacities and clearing up of the vitreous have been very gratifying. In the recent cases where the opacities are small, although the vitreous may be so cloudy that the details of the fundus are made out with difficulty and visual acuity is very much lowered, there is usually a rapid clearing up of the exudates and visual acuity, if not fully restored to normal, may be greatly improved, so that useful vision is obtained. In cases of long standing and where the opacities appear as large, dark, irregular masses, the degeneration has been too extensive to expect much improvement from any treatment, and in such cases the prognosis is less favorable. Even in the recent cases the prognosis is not so favorable in those cases occurring in elderly people, still the progress of degeneration may be checked and absorption of a considerable portion of the exudate take place with retention of a useful amount of visual acuity. It is in the young individual where most favorable results are to be looked for.

In hemorrhage into the vitreous the prognosis is much more favorable where the extravasations are small, in which case complete absorption may take place. In the larger hemorrhages more permanent opacities are apt to remain in spite of treatment.

PRECAUTIONS TO BE TAKEN.

I am not in favor of pushing the drug until its physiologic effect is obtained. The disadvantages that are liable to arise from such a procedure are apt to offset any advantages we are getting from the drug, as the treatment may have to be discontinued and can not be returned to for several days. It is important that the treatment should be carried out systematically and at regular intervals if we desire to get results. If sweating is not produced satisfactorily from the first dose, it is well to begin with not more than an eighth of a grain; it can be judiciously increased until the dosage is reached which produces a profuse sweating. I have found that an eighth of a grain is quite sufficient in the majority of instances, although I do not hesitate to give larger doses when necessary. As yet I have not seen any bad effects from the treatment as outlined, although as high as a quarter of a grain of the drug has been used on alternate days for several weeks at a time. I consider its administration subcutaneously more efficacious than when given by the mouth.

ILLUSTRATIVE CASES.

Case 1.—Mrs. J. B., aged 40, first seen Nov. 23, 1901, had foggy vision in front of right eye with left half of objects more blurred than the right half and could see wavy vertical lines in front more marked toward the left half of vision. R. V.=20/30 — J. viii and with glasses (105 + 0.50 + 0.75) R. V.=20/15 and words J. ii. Some difficulty in distinguish-ing colors. Field of vision showed a relative central scotoma and several absolute scotomata scattered over lower portion of field. Fields for color absent. No specific history. The ophthalmoscope revealed a fine hyalitis with several small partially movable vitreous opacities at the upper inner quad-rant of the vitreous near the posterior surface of the lens. Although there were no gross changes in the fundus a number of small choroidal exudates could be seen situated between optic disc and the macula.

Treatment.—Hypodermic injections of pilocarpin hydrochlorate one-eight grain with increasing doses of a saturated solution of potassium iodid considerably cleared up the choroidal exudation and caused the vitreous opacities to disappear entirely. The scotomata cleared and the field for colors, although contracted, reappeared. In February she had a return of the symptoms but no vitreous opacities, although the choroidal exudates could be distinctly seen and the field of vision showed almost a complete absolute ring scotoma with slight blurring at fixation point. A smaller course of treatment was undergone and after taking twelve of the sweats there remained only a slight blurring where the absolute scotoma had been. Her condition since then has gradually improved and her eye feels very comfortable.

Case 2.—Mrs. C. S. B., aged 26, L. E. chorioretinitis with patches of choroidal atrophy in macular region and floating vitreous opacities. R. E. choroidal exudates and pigmented patches of choroidal atrophy in periphery. L. V.=20/200; R. V.=20/20.

Treatment.—Pilocarpin sweats on alternative days for one month. Vision in left eye gradually improved until at end of one month L. V.=20/30. No potassium iodid given in this case.

Case 3.—Henry W., aged 55. Myopic 7 D. in left and 5 D. in right eye. L. V. with glasses =20/40. R. V. with glasses =20/30. Ring-shaped spot in front left eye. In left eye has exudative choroiditis with floating membranous opacities. Right eye chronic choroiditis of myopic type.

Treatment.—Pilocarpin sweats. One-eighth grain increased to one-quarter grain, given for one month with marked improvement in symptoms. Less vitreous opacities in left eye; vision much clearer. L. V.=20/30; R. V.=20/20. At same time taking increasing doses of saturated solution of potassium iodid as high as grs. 240 which was continued with intervals of rest after the sweats were stopped. At present V. with glasses =20/20.

Case 4.—M. Q., aged 45, first noticed blurring in front of right eye followed by severe frontal headaches. Eyes ache and get red; sharp shooting pains through right eye. Gets dizzy during the day and staggers. The right eye hurts when moved in any direction, especially upward. L. V.=20/30 — J. i slowly. R. V.=20/70 — J. ii unimproved with glasses. Right eye: ophthalmoscope showed a hyalitis with dark cobwebby opacities in the vitreous. The details of the fundus could be made out with difficulty when irregular whitish patches could be seen in the macular region. Left eye: numerous choroidal exudates, especially to the nasal side of the optic disc. No vitreous opacities and media clear. Field of vision contracted in both eyes with a central blurring in field of right eye.

Treatment.—Pilocarpin sweats one-eighth grain increasing to one-sixth grain and increasing doses of saturated solution of potassium iodid. In ten days the headache, pain and soreness in right eye had become much less. L. V.=20/20 — J. i; R. V.=20/50 J. viii. The vitreous opacities were smaller and less numerous and the details of the fundus were better seen. At the end of one month: L. V.=20/15 J. i; R. V.=20/40 — J. iv. No vertigo, no headaches and no soreness on moving the right eye. The field of vision is only slightly contracted and the central scotoma has entirely disappeared from field of right eye. The vitreous still contains a few floating opacities and the fundus still shows some choroidal changes.

Case 5.—Miss G. L., aged 17. Right eye: iridocyclitis, choroiditis. No details of the fundus can be made out on account of the floating opacities in the vitreous. Keratitis punctata. R. V. — fingers at 3 feet.

Treatment.—The iritis was treated with atropin, hot applications and dionin. After the acute stage of the iritis had subsided a course of pilocarpin sweats on alternate days was given hypodermically and saturated solution of potassium iodid in increasing doses, administered internally. At the end of twelve sweats the vitreous was much clearer and a hazy view of the fundus could be obtained, when a number of choroidal exudates scattered over the fundus could be seen. There were also fewer exudates on Descemet's membrane. R. V.=20/40. After an interval of three weeks the pilocarpin and potassium iodid were again given, the former on alternate days. After ten sweats had been taken the ophthalmoscope showed there were still present some faint opacities in the vitreous but less dense than formerly. The fundus could be seen distinctly, having a number of choroidal exudates scattered over it but no gross changes were present. The deposits on the posterior surface of the cornea had entirely disappeared. R. V.=20/30 — J. i.

THE TREATMENT OF UVEITIS.*

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In considering briefly the subject of the "Treatment of Uveitis," the author wishes first of all to disclaim, as he did several months ago to our distinguished chairman, any intention of offering anything new or original in the therapeutics of this condition. In the limits of a paper like the present one we will have to content ourselves often with very brief references to some methods of treatment, while to others no allusion at all can be made.

After having tried various remedial agents suggested at different times by numerous observers, and too often, alas, with indifferent or no success, I must confess that I am becoming less and less inclined to use with any degree of confidence the many new drugs of whose curative powers we read such marvelous accounts. In many instances I do feel it my duty to give them a trial on some of our clinical patients; in many others, again, the reports are so weird and improbable, or the reputation of the reporter for accuracy of observation is so poor, that it has not seemed worth the trouble to try the remedies even on our hospital patients. I find myself, consequently, more and more disposed to fall back on a few tried and trusty remedies, whose possibilities (as I have discovered many a time) I had not by any means exhausted.

Before undertaking the treatment of a case of uveitis (or, for that matter, of anything else), our first and most important task is to discover, if possible, what is the underlying cause of the disease; what Mauthner would call "die etiologische momente der zweiten Kategorie," and from this get the indication for treatment. In not a few cases our success in treating the ocular condition will depend largely upon our success in discovering the underlying cause, whether it be syphilis, rheumatism, gout, influenza, malarial infection or any one of numerous other causes, and directing our treatment first of all to this.

The various papers on uveitis which have been read to-day show that the subject has taken a very wide range. While the iris is a part of the uveal tract, and while an inflammation of this structure might be included under the term uveitis, there is only one point in the treatment of this disease to which I shall allude to-day, and that is merely a word as to the treatment of specific iritis. In my experience the great majority of the cases of specific plastic iritis are early secondary lesions and require the same treatment as other early secondary syphilides, viz., mercury. My only excuse for referring to this matter is that I have seen so many cases of this disease in which iodids or mixed treatment had been prescribed by other men generally considered good ophthalmologists. In most of these cases, it seems to me, that there is no indication whatever for the use of the iodids.

The observation of Snellen[1] is doubtless familiar to you all. In a case of so-called iritis serosa with increased tension he did a sclerotomy and one of the small masses of exudate on the posterior surfaces of the cornea came out, and when examined microscopically was found to be, not a cluster of cells, but a collection of microbes, very short bacilli. In a second case he found cells, and between these he found microbes similar to those found in the first case. From these observations he concludes that descemetitis is sometimes a disease, *sui generis,* due to microbes whose toxins cause irritation of the uveal tract. While this observation of Snellen would tend to show, therefore, that the condition may be at times a disease, *sui generis,* it is generally admitted that in most cases punctate keratitis or descemetitis is not a disease, but merely a symptom, perhaps of a process which long since ran its course.

Some months ago there was a man who made the rounds of the different eye clinics of New York City who presented this one symptom (of dots on Descemet's membrane) to as marked a degree as I have ever seen it. There was no redness or sensitiveness of the eye or any evidence of any acute process, and there was comparatively little visual disturbance, only numbers of unusually large dots on the posterior surface of the cornea, most numerous below, and evidently the remains of an old process, as they were absolutely unchanged during the period he was under observation, which was several months. Such a case, however, is unusual, for generally after the process is at an end the exudation or dots on the cornea disappear.

Recently I saw a case at the New York Eye Infirmary where the symptoms of punctate keratitis at once established the diagnosis, and consequently the treatment. The patient, a young hostler, complained of defective vision of only a few days' duration, and was turned over to an assistant for examination. The case was a very recent one, the media (with one exception, subsequently to be noted) were perfectly clear, and there was an opaque area at the macula with just a faint suggestion of redness at the center, and the assistant, who was not by any means a novice, made the diagnosis of embolism of the central artery of the retina, a condition to which on superficial examination it did have considerable resemblance. But more careful examination with dilated pupil disclosed, however, numerous dots on Descemet's membrane, especially below. As soon as the assistant's attention was called to this feature of the case he appreciated at once its significance, and that it established the existence of some inflammation of the uveal tract and promptly revised the diagnosis to that of choroidal exudation at the macula. Located as it was the visual disturbance was immediate, and we saw the patient very soon after the beginning of the process and before there were any vitreous opacities, which soon afterward showed themselves. The patient gave a clear specific history and was at once put on appropriate treatment.

Every one probably has his own favorite method of securing rapid mercurialization, as it is so often necessary to do in specific eye troubles. First and most important of all, in my opinion, is inunction persistently employed. From two to eight grams of blue ointment, according to the individual and the severity of the case, should be rubbed in daily; in children one to three grams can be employed daily. A prominent genitourinary surgeon of New York with whom I have seen cases in consultation, uses as an adjuvant when especially quick results are desirable, the following:

R.	Salicylate of mercury....................	gr. iii
	Benzoinol	ʒi

M. Inject ʒss deep into the gluteal muscles every four days, shaking well first.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

Schirmer of Greifswald uses the following:

R. Hydrarg. biniodid		25
Potass. iodid.	2	5
Aq. destil.	25	

M. Sig.: One Pravaz syringeful in the gluteal muscles.

Internally, I am in the habit of giving small doses of calomel (gr. 1/20) every hour, watching the teeth carefully.

Where *time is not such an important element*, I would still prefer inunction, using less of the ointment and interrupting the treatment from time to time. In specific cases I have accomplished most in the absorption of the vitreous opacities which attend exudative choroiditis by the use of the iodids. As to the subconjunctival injection of solutions of sublimate in these cases I have little experience. I found them painful and not followed by any surprisingly beneficial results in several cases of parenchymatous keratitis. The case of choroidal exudation just referred to ran a course of several weeks, having at the end of this period a large plaque of choroidal atrophy at the macula with a large central scotoma. In a similar case of specific origin I might be tempted to give the subconjunctival injection of sublimate a trial, hoping that possibly more rapid limitation of the process might be secured. In Deutschmann's clinic[2] this method was employed in seven cases of so-called iritis-serosa with exudative deposits on Descemet's membrane, and in twenty-nine cases of choroiditis or irido-choroiditis, and his conclusions were as follows: In three of the iritis-serosa cases the course was as good as, though no better than, with the usual methods of treatment. In three cases the improvement was so striking (only three injections about a week apart) that one could not but ascribe it to the sublimate injections. As to the irido-choroiditis cases, sometimes the result was negative where a similar negative result had followed other treatment; in others, again, the injections had a decidedly favorable influence where other treatment had failed. Deutschmann thinks it is especially indicated in specific eye diseases. The pain following the injection varies, usually lasting two to three hours, and leaves a conjunctival swelling for one to eight days, or longer. Usually a 0.1 per cent. sublimate solution (1-1000) is employed, of which 1/10 of a Pravaz syringeful (i. e., 0.1 m. g. of sublimate) is injected.

Careful investigations by Stuelp[3] and Addario[4] have demonstrated that these subconjunctival injections of sublimate could not operate through any bactericidal effect, inasmuch as they did not penetrate into the interior of the eye in any demonstrable amount. The favorable results following their use must depend, therefore, upon the fact that they cause an acceleration of the circulation, especially of the lymphatic circulation. Mellinger thinks that the same results would be produced by injecting solutions of salt (3/4 per cent.), and his suggestion has been followed by many. Pflüger claims to have found the subconjunctival injection of iodid and chlorid of sodium efficient in cases, 1, of chronic central and peripheric choroiditis, especially the cases of progressive myopia complicated with choroiditis at the posterior pole, frequently localized concentrically about the papilla; 2, in the cases of opacities of the vitreous, usually combined with puncture of the anterior chamber, which increases the effect of the injections.

Schirmer[5] is of the opinion, however, that in recent inflammations sublimate injections accomplish more than the salt solutions.

If the punctate keratitis is not dependent on specific diseases, other treatment may be more satisfactory. Recently a patient came under my observation at the New York Eye and Ear Infirmary, who had been previously under treatment at another institution, where a diagnosis of conjunctivitis had been made. There was, however, no secretion, merely a slight and uniform injection of the whole ocular conjunctiva of both eyes, which almost entirely disappeared on deep pressure, as also after the instillation of a few drops of adrenalin, to soon return, however. The patient, a young married woman, the mother of three children, was in good health and complained of no pain or visual disturbance, but merely of the redness of her eyes. The iris was of normal appearance, the reaction of the pupil normal, as was also the appearance of the fundus, and the vision, with some hyperopia corrected was 20/30. It was thought that it might be a case of vasomotor paresis, and a mydriatic was employed. Then, under these more favorable conditions, my assistant discovered a very few faint spots on Descemet's membrane in both eyes, and the nature of the condition was then apparent. There was a uveitis of both eyes, which, in my experience, is very infrequently met with, especially where it begins in each eye at the same time. There was no evidence of specific disease, and the patient was put on atropin, *hot bathing and salicylate of soda, 80 grains a day*, with inunctions of mercurial salve, as I do not by any means limit the use of mercurial inunctions to specific cases. Where there is no evidence of specific disease I have generally secured better results with the salicylate of soda in large doses than from the iodids, giving as was suggested by Gifford in sympathetic inflammation,[6] from 50 to 150 grains a day, according to the severity of the condition.

I recall a patient with a distinct rheumatic history whose vitreous several times became so clouded that it was impossible to see the fundus, but each time cleared up entirely under salicylate of soda. Within a month I have seen a patient, a middle-aged lady, who complained of defective sight in her right eye and very careful examination revealed a very fine haze in the vitreous (vision corrected was 20/40). This patient was gouty and had been under treatment for this condition by her family physician. It seemed most likely that the irritation in the uveal tract might be caused by gout, and I felt warranted in putting her on salicylate of soda.

The etiology of some of these cases is obscure, and they sometimes last a long time and appear to be little influenced by any treatment. In one of my patients, a lady about 45 years of age, the condition started as a keratitis punctata and subsequently there was a fine haze in the vitreous, which lasted for over two years, being sometimes more, sometimes less apparent. She was at the menopause, and it was not impossible that the ocular trouble was in some way associated with the vascular and other disturbances incident to the menstrual irregularity. At no time was her vision less than 20/20, and yet the slight vitreous haze annoyed her excessively. At various times during the two years she was under treatment, I employed the iodids, the salicylates, pilocarpin and other diaphoretics, as well as atropin in the eye, and yet nothing seemed to have much effect in clearing up the vitreous opacities, which gradually faded away after she ceased to menstruate.

The treatment of chronic uveitis in elderly people with more or less marked choroidal changes at the macula and associated often with great visual impairment, has been most unsatisfactory in my hands. I do not remember that I ever saw a case improve under any form of treatment; in fact, the visual impairment of most of the cases I have observed has gradually increased. It has been my usual custom to prescribe iodid of potassium in these cases, but I must confess that I have seen very little, if any, benefit follow its use.

Pflüger, of Bern,[7] contributed recently an article on the subconjunctival injection of hetol or cinnamic acid. He says that Landerer has employed intravenous and gluteal injections of hetol in the treatment of tubercular processes, according to whom it produces a general leucocytosis. An aseptic inflammation about the tubercular foci is caused, leading to the development around and throughout the tubercle first of leucocytes, then of embryonic connective tissue and vessels, and finally of connective tissue encapsulation and to the absorption of the cheesy masses. The histologic changes produced by cinnamic acid injections in tuberculous conditions are, according to Landerer, the same as are observed in the natural healing of tuberculous processes, only they are more active and energetic.

Pflüger endeavored to avail himself of the artificially produced leucocytosis in numerous ocular conditions. He found the hetol injections harmless and unassociated with any ill effects, and claims to have had good results in numerous ocular inflammations. He used a 1 per cent. solution of which he injected 0.4 to 0.5 c.cm. every other day, using massage for a few moments afterward and leaving the eye unbandaged. The pain is inconsiderable and lasts only a few minutes. I have tried it in one or two cases recently. The pain is not considerable, but it is too soon to tell what are the results. Pflüger claims to have seen good results from this treatment, among other conditions, in cases of uveitis of various etiology and various clinical forms, often with iritis, or irido-cyclitis serosa as a complication with deposits on Descemet's membrane. He states that he has seen severe chronic uveitis combined with diffuse haziness of the cornea greatly benefited by hetol injections.

I have seldom employed blood-letting except in very severe forms of iritis, but Fuchs, a man in whom I have very great confidence, says that in suitable cases blood-letting is of decided value, using either the natural leech (5 to 10) or Heurteloup's artificial leech (1 to 2 cylinders full). In inflammation of the conjunctiva, iris or ciliary body, he takes the blood from the temple, while in deep inflammation, as in choroiditis, retinitis or neuritis, he advises the blood-letting to be from the mastoid.

There are few cases of uveitis in which atropin is not indicated as oftentimes also moist heat and at times diaphoresis, as by sweat or hot-air bath, or pilocarpin internally or hypodermically.

Schirmer,[6] in a recent article on the subject of traumatic inflammations of the eye, bears testimony to the great value of inunction of mercury in traumatic uveitis. Professor Haab at the Utrecht Congress in 1899, recommended iodoform as an intra-ocular disinfectant. But to go at greater length into the large subject of the treatment of traumatic or post-operative uveitis would carry us far beyond the limits of this paper.

To recapitulate briefly it may be said:

1. That the etiology of the ocular inflammation is to be investigated in order to obtain some general therapeutic indication.

2. That in general in acute processes of specific origin, mercury, best by inunctions, is indicated, aided, if necessary for the absorption of exudates by iodids.

3. That mercurials are often of service even where there is no specific cause demonstrable but that here oftentimes salicylates accomplish more than the iodids.

4. That atropin is pretty generally indicated, aided, if necessary, in severe inflammations by moist heat and diaphoresis.

5. That subconjunctival injections either of sublimate or chlorid of sodium may sometimes be tried. They can do no harm, though it is not yet certain how much good they accomplish or just what are their indications.

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DISCUSSION

ON PAPERS OF DRS. DE SCHWEINITZ, WOODS, FRIEDENWALD, HANSELL, WILDER, WOODRUFF AND MARPLE.

DR. GEORGE E. DE SCHWEINITZ, Philadelphia—I would like to emphasize, as my colleague, Dr. Friedenwald, has done, the great importance of investigating the fundus in these cases, for in practically all of them some form of choroiditis can be found. There is one other point, and that is, that where you find descemetitis in association with scleritis and episcleritis, there is pretty sure to be a choroiditis underlying it. I would like to say a word in regard to treatment. I agree with Dr. Marple that the old methods are the best. I have never seen a case in which some good could not be obtained with mercury. I have used subconjunctival injections very much, but have had little result in some cases, but good results in iridocyclitis, always using now the salt solution, having given up the bichlorid. I believe it is the stirring-up of the lymphatic circulation and not the therapeutic action of the drug that produces the beneficial effect. As to the operative treatment, in some cases, where the angle is filled up, operation may do much good in opening it.

DR. JAMES H. SHORTER, Macon, Ga.—Since I moved South I have been struck with the great number of cases of the type Dr. de Schweinitz describes, among negroes, and also its great prevalence among females, and would like to ask Dr. de Schweinitz if they do occur more frequently in females. In a good many of these cases where there was a tendency to constant though intermittent progression, I have often noted a tension as low as minims 2, especially at times of acute exacerbation. At such times the use of atropin did good and brought tension up to normal. There was often an increase of the trouble with each menstrual period. As to the etiology of this disease, I have not been able to find out anything. Syphilis does not seem to be a factor, though so extremely prevalent in the negro race. The prognosis is of the worst. In spite of all treatment the disease always steadily progressed but usually slowly until there was complicated cataract, densely opaque cornea, etc. I tried pilocarpin, iodid of potassium, subconjunctival injections of mercury and other remedies, but no treatment seemed of any value.

DR. J. E. COLBURN, Chicago—I have been struck by the recurrence of certain types of uveitis in the late winter or early spring months and only recently have reviewed a few cases that have been, some of them, for a number of years, under my observation, and where I could predict the return of the patient about March or April with a recurrence of the disease. In this class of cases I have usually found that the elimination by the kidneys is extremely low; that the urine will pass over week after week without varying much from 1008 or 1010 and in which the solids and uric acid are extremely low. Sometimes there is a slight suggestion of albumin and mucin and yet the whole picture is of functional albuminuria rather than structural. I have often had to have them seek a more salubrious and temperate climate; some of them have gone South and to California and have had but slight attacks and some no recurrence of the attacks. I have found it well to use some aid in elimination—the Turkish bath, salicylate of sodium or strontium and mercurials, and they will often pass over the spring months without a recurrence of the attack. Within a few weeks I saw a patient that I have had under observation for ten years, a woman, who came to me with a very serious condition, her vision being 2/200 in each eye. Almost without exception she has had a return of the trouble during the latter part of each winter. I was surprised on one occasion to find that the irides were attached to the lens at the lower outer segments, and she had well-defined triangular markings in the anterior chambers. The patient has been pronounced free from any organic disease. I saw her this spring with lowered vision, but hope to relieve her condition by the use of eliminants.

Dr. Leartus Connor, Detroit—In the more marked cases of these conditions it has occurred to me to secure results that were very pleasant to the patient by the administration of potassium or sodium iodid, preferably the latter, beginning with very small doses and systematically increasing them, giving it in milk and increasing one grain a day, with an occasional sweat or purge, the doses being increased until they are very large, even in feeble people. Under this treatment the general condition as well as the local condition of the eye improves. A very essential thing is not to give a big dose to start with and it is well to write down on a blank the method of increasing so that there will be no mistake. If the condition of nutrition does not improve then, of course, the remedy is contra-indicated, but I have not found a case in which it did not improve.

Dr. E. J. Gardiner, Chicago—I use the iodid of potash in the manner described by Dr. Connor and get very good results. I would like to call attention to the detail in the management of these cases, that has not been mentioned—exercise in the open air with the eyes properly protected, regular exercise in the form of walking I have found very helpful.

Dr. Hiram Woods, Baltimore—In answer to Dr. Shorter's question about sex, Griffith's cases were confined almost entirely to young females. The majority of my patients were females, the primary attack coming during the second decade of life. I agree with Dr. Woodruff as to the use of pilocarpin. I put the patient to bed, administer pilocarpin for diaphoresis and follow it up with salicylate of sodium, or where I find syphilis, mercury. In reference to the use of atropin, mentioned by Dr. Marple, I would like to ask him if he thinks there are contra-indications for its use. If so, what are they? I have never seen increase of tension in these cases of plastic choroiditis, and always feel safer when the pupil is dilated. The tendency to extend forward is great.

Dr. W. B. Marple, New York—I think Dr. Woods must have misunderstood me. I did not mean to say that I knew of cases where atropin was contra-indicated, but simply that there may be acute cases of uveitis where it is not indicated. I almost invariably use it and consider it indicated.

A NEW SCHEME OF THE ZONES AND CENTERS OF THE HUMAN CEREBRUM,

WITH REMARKS ON CEREBRAL LOCALIZATION, ESPECIALLY WITH REFERENCE TO OSTEOPLASTIC OPERATIONS FOR BRAIN TUMORS.*

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It is my intention in this contribution to present without extended comment or study of the literature of the subject, new diagrams of the zones and centers of the human cerebrum, and on the basis of these schemes to indicate a series of cranial areas for operation in cases of brain tumor. In 1898 I published a scheme of brain centers which is reproduced in the diagrams (Figs. 1 and 2). Then as now I believed in the separate localization in the cerebrum of the representation of sensation and of movements. My views regarding this subject have not changed in any essential particulars, and were presented in detail at the meeting of the American Neurological Association held in Boston, June, 1901.[1]

Recently acquired clinicopathologic facts regarding cerebral localization are chiefly of interest in connection with the question of a separate center for the so-called stereognostic perception. The weight of evidence favors the location of this center in the superior parietal convolution (parietal of Wilder), and its correlative convolution on the mesal aspect of the hemisphere, the precuneus or quadrate lobule. Some reference may be made here to evidence on this subject already presented by the writer in other papers. In several cases of brain tumor recorded by me,[2] when astereognosis was present, the evidence indicated the localization of the lesion in the postparietal region—certainly always in the region posterior to the central fissure. Astereognosis was especially prominent in tumors involving the superior parietal convolution. It is important to recall here that in some of these cases motor paralysis was absent for some time after astereognosis became a well-marked symptom. In growing tumors of the postparietal region paralysis sooner or later nearly always becomes a prominent manifestation, first as a pressure and later as an invasion symptom.

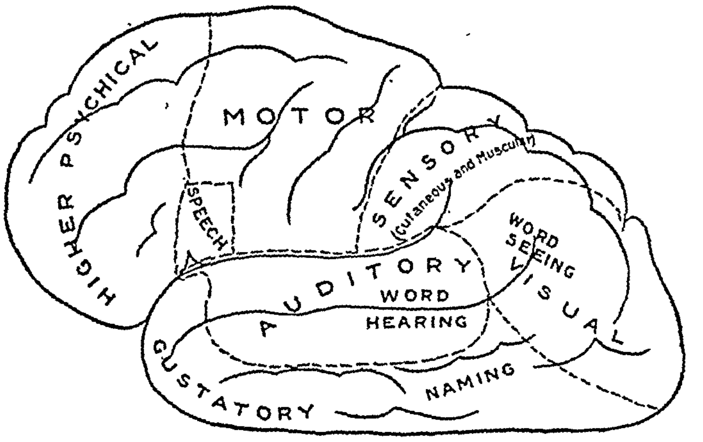

Fig. 1.—Zones and centers of the lateral aspect of the human cerebrum (1898).

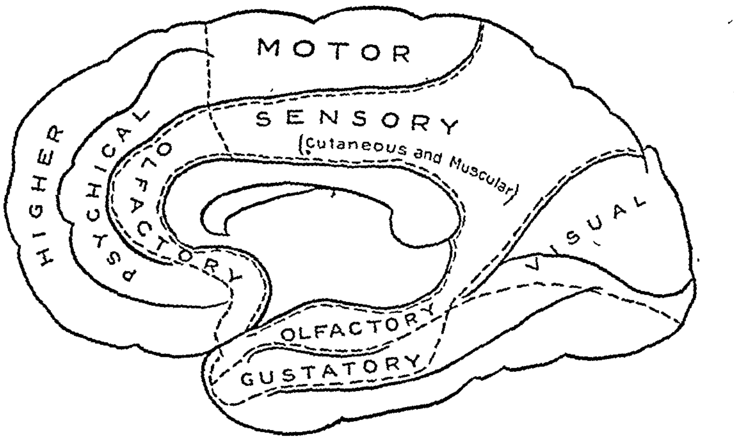

Fig. 2.—Zones and centers of the mesal aspect of the human cerebrum (1898).

Other cases with astereognosis (associated with sensory symptoms) have been recorded in recent years by Burr[3] and by Walton and Paul.[4] Starr and McCosh[5] long since recorded a case with loss of the muscular sense as the result of operation for the removal of a small angioma at the junction of the superior and inferior parietal convolutions. At the time when this paper was published, astereognosis had *not become* the subject of investigation by neurologists.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Richard Dewey and H. A. Tomlinson.

In 1901[6] I put on record a case in which astereognosis and ataxia were present, but not motor paralysis, and in which autopsy showed a large area of softening confined to the superior parietal convolution. This was an especially valuable case, as the astereognosis could not be attributed to distant pressure—an objection which possibly might be made if the lesion were a tumor, and yet in tumor the astereognosis is doubtless a symptom of lesion of the parietal lobe. Others have contributed facts bearing on the location of a stereognostic area in the postparietal region.

For the reasons above given, and for others which I can not at this time consider, the stereognostic center has for the present been located by me in the superior parietal convolution. It probably extends over the edge of the hemisphere into the precuneus. The centers for cutaneous sensibility have been placed in the limbic lobe, and also in the posterior half of the postcentral convolution, between the stereognostic center and the motor region. The centers for muscular sensibility have been located in the superior and inferior parietal convolutions, presumably not in exactly the same position as the region for pure astereognosis. We are not yet in a position to accurately demarcate the regions for stereognosis and the muscular sense, and between these and the areas for cutaneous sensibility if the last has, as seems probable, a representation on the convexity of the hemisphere. Recent experimental investigations, as those of Sherrington and Grünbaum,[7] would seem to indicate that the motor region is largely and perhaps almost entirely in front of the central fissure. If this should eventually prove to be true, it may be that the representation of cutaneous sensibility is, in part at least, in the postcentral convolution. The investigations of Flechsig, which will be referred to presently, are of interest in this connection. For the present, so far as the lateral aspect of the cerebrum is concerned, I have, as above stated, simply placed the cutaneous sensory representation between the stereognostic and motor regions in the posterior half of the postcentral convolution.

As the question of the separate representation of a stereognostic sense is of vital importance in discussing our scheme of brain centers, an additional word or two might be said about the clinical study of astereognosis. Neurologists of equal merit have drawn contradictory conclusions with regard to astereognosis as a distinct clinical phenomenon from cases which have been recorded with elaboration and evident care. By some it is held that astereognosis is never present without sensory loss on the one hand. or without motor impairment on the other. My own observations have led me to the conclusion that we may be confronted, as regards astereognosis of cerebral origin, with at least three classes of cases: (1) cases of what might be termed sensory astereognosis, in which inability to recognize the nature and character of an object by manipulation is dependent largely or altogether on sensory impairment; (2) cases in which a similar incapacity is due largely to motor impairment, which might be regarded as instances of motor or mechanical astereognosis, and (3) cases of pure astereognosis. Cases belonging to the third category are rare, but I have observed two such cases, and one or two have been observed by my colleague, Dr. Spiller. These patients, although showing neither anesthesia nor paresis, though possibly a very slight impairment of the sense of position detected only by careful testing, are unable to recognize different objects by manipulation. With regard to the cases of the first two categories, it should be remarked that in most instances an admixture of pure astereognosis with sensory or motor astereognosis is present in the same case, this being dependent on the fact that lesions and especially gross lesions commonly implicate adjoining regions of representation.

The question of ataxia of cerebral origin is one that needs to be carefully considered in connection with a revision of the diagrammatic schemes of the cerebral centers and zones. As stated at the beginning of this paper, it is not my purpose to go into any lengthy discussion of the mooted questions concerning the functions of the brain, but rather to present only sufficient data and comment to make clear the reasons for any new topographical arrangement. Like astereognosis, ataxia, when a symptom of cerebral disease, may be present, (1) as an isolated manifestation; (2) in combination with astereognosis; (3) in combination with motor paresis, or paralysis, or (4) in combination with both astereognosis and motor paresis or paralysis. Pure, uncomplicated ataxia of cerebral origin, like pure astereognosis, is rare, and can only result from a peculiarly restricted lesion, one which involves the centers or tracts for a portion of the so-called muscular sense. I have spoken of three forms of astereognosis, namely, sensory astereognosis, motor astereognosis and pure astereognosis. Similarly at least three forms of cerebral ataxia need to be considered, and these, according to Oppenheim,[8] are caused by lesions in three different localities, the motor region, the internal capsule and the parietal lobe. On this subject Oppenheim speaks as follows: "If the ataxia is caused by a disturbance of the motor zone it is frequently associated with motor irritation and always with paralytic conditions. A very pronounced ataxia can not arise in the motor area of the cerebral cortex because the process causing this produces so marked a grade of paralysis that this conceals the ataxia. The disturbance of sensation associated with ataxia of this origin is, as a rule, slight. It can involve single sensory qualities or all sensory qualities with the exception of the sensation of pain. The sensory impairment, however, is not confined to the sense of position. The ataxia produced by lesion of the motor cerebral region is, as a rule, a monoataxia, seldom a hemiataxia. It is not associated with hemianopsia. If the ataxia is the result of a lesion of the internal capsule (*carrefour sensitif*), it is almost always a hemiataxia. In addition, it is always associated with a hemianesthesia, which not only is distinctly present, but implicates more or less all qualities of sensation. As a rule hemianopsia is also associated with it. Affections of the parietal lobe cause ataxia implicating arm and leg of one side or only one extremity, especially the arm. Symptoms of motor irritation are absent or rather the result of action at a distance. Likewise paralytic phenomena are absent or are not pronounced. A disturbance of sensation has always the character of partial hemianesthesia in that with intact pain and temperature senses, the tactile sensation, and especially the sense of position, as well as the stereognostic perception, is diminished or abolished. All this, however, is felt only so long as the disease process does not penetrate into the medullary substance of the parietal lobe and also not towards the median surface of the hemisphere."

In the same connection Oppenheim says that the postcentral convolution is a border zone, and the distinction, as regards the effects of lesion, between it and the postparietal region can not always be sharply made.

In our scheme muscular sensibility as well as stereognosis has been located in the postparietal region, and it is to be presumed that ataxia, due to limited postparietal lesion, results from impairment or obstruction of this region of representation. The term muscular sense is, perhaps, not altogether desirable, as it may represent more or less than that which is necessary in the process of coördination; in the present state of our knowledge it is, however, the most convenient term. What is known as the sense of position is most markedly disturbed in cerebral cases with ataxia and with astereognosis.

In a cerebral case presenting ataxia and astereognosis, with little or no motor impairment, and with only slight or moderate impairment of sensation (as partial tactile loss and impairment of the sense of position), the diagnostician would certainly turn to the postparietal region for the site of the lesion.

The motor area remains much the same in the new scheme as in the diagram of 1898. It has, however, one important difference. After much consideration I have concluded to place the irregular line indicating the posterior limits of the motor area on the lateral aspect of the hemicerebrum so that it extends from above downwards through the middle of the postcentral convolution; that is, in a line about midway between the central and the retrocentral fissure. I have already referred to the experiments and observations of Sherrington and Grünbaum, which tend to show that the motor region is largely, if not entirely, in front of the central fissure. Flechsig, as will be seen later, believes that the tactile radiations go largely to the postcentral convolution, and others, as v. Monakow,[9] Bruns[10] and Oppenheim, hold that the postcentral convolution should be regarded as a border or merging zone between the parietal lobe and the motor region. In this state of the subject, with the old views indicating that the postcentral convolution is a part of the motor zone, it would seem best for practical purposes to follow the plan above described and shown in the diagram, Fig. 5. It is particularly desirable when the question of surgical procedure is pending, to recognize the fact that the purely motor area is very largely cephalad of the central fissure, and yet that some motor representation may exist along its posterior border.

The auditory center has been made to include the retroinsular convolutions as well as the posterior part of the first temporal convolution. The reason for including the retroinsular convolutions will appear when the investigations of Flechsig are discussed. The posterior portion of the second temporal convolution has been set apart as a separate center, which has been provisionally designated as the equilibratory center. Formerly I included a portion of this convolution in the auditory center, but it is not improbable that if the auditory center proper, which is the cerebral representative of the cochlear nerve, is situated in the first temporal and retroinsular region, that the adjoining portion of the second temporal convolution may be the cortical representative of the vestibular nerve, as has been suggested by Flechsig. Whether equilibratory may be regarded as the best designation for this center is doubtful, but no better suggests itself at present, and the entire matter of the cortical terminus of the vestibular branch of the eighth nerve may be regarded as tentative. Dana[11] suggested the right temporal lobe as the probable seat of cortical vestibular representation. The author's views and the status of the entire subject prior to 1898 are presented in the following quotation from his treatise:[12]

"It is probable that the cerebral representation of the vestibular nerve is distinct from that of the cochlear, and Dana has suggested that this representation is in the temporal lobe, and especially on the right side, basing this view on two personal cases of focal lesion of the right temporal lobe, and also on a study of the meager literature of the subject. Bechterew[13] believes that the evidence afforded by the cases compiled by him justifies the hypothesis that the prepeduncles (anterior cerebellar peduncles) are connected with the upper portion of the parietal lobe, but Dana holds that, while the muscular sense may be impaired through destruction of this lobe, the true spatial sense is not affected. Bechterew and others believe that they have shown that the temporo-occipital region is connected with the cerebellum of the opposite side by a band of fibers which pass by way of the medipeduncle, the pontile nuclei, and an external bundle in the crus. That this is not connected with the first and upper and anterior part of the second temporal convolution was shown by Spiller and the author.[14] In a case of cerebral abscess situated at the posterior part of the external capsule, and involving the medullary substance of the first temporal and part of the second temporal convolution and also the posterior part of the lenticula, this band of fibers was not degenerated. Dejerine[15] has shown that the external bundle of the crus is formed by projection fibers which come from the temporal lobe, and especially from the second and third temporal convolutions, and he also believes that this fasciculus remains intact after lesion of the occipital lobe, differing in this respect from Bechterew. In the 'naming center' case (page 345), in which a tumor involved the midtemporal region and chiefly the left third and fourth temporal convolutions and subjacent medullary substance, one of the first symptoms complained of by the patient, five years before her death, was vertigo; and this was a recurring phenomenon. She did not, however, suffer from ataxia or forced movements. In Dana's two cases destructive lesions were present in the middle portion of the right temporal lobe, and in both vertigo and forced movements were important symptoms. It must not be overlooked that in one of these cases, at least, the dura was markedly involved, and that vertigo is a well-known symptom of irritative dural disease. The membranes were not, however, involved to any extent in the other cases, and special forced movements are not characteristic of pachymeningeal vertigo."

The entire visual area is placed in much the same positions as in the older diagram, namely, so as to occupy the calcarine region on the mesal face of the hemisphere and the entire occipital lobe and the posterior extremity of the inferior parietal convolution on the lateral face of the hemisphere. I have made two subdivisions of this visual area in the new scheme, one of which is designated as the lower visual area and the other as the higher visual area. The lower visual area is the center for half retinal representation, the region destruction of which on one side causes lateral homonymous hemianopsia. This region in the new scheme occupies mesially the cuneous or calcarine region and on the lateral aspect the first occipital convolution. It corresponds to Flechsig's visual projection system as shown in the diagrams, Figs. 3 and 4. The higher visual area embraces the remainder of the occipital lobe on the lateral aspect of the hemisphere and a small portion of the inferior parietal convolution; in other words, the so-called angular convolution in part and the rest of the convex portion of the occipital lobe not included in the lower visual area. In this higher visual area word seeing and probably letter seeing have their representation. Object imagery I have placed anteriorly just outside of this higher visual area, a subject which will be considered shortly.

The olfactory and gustatory centers occupy the same position as in the earlier diagrams.

I have always advocated a higher psychical localization in the prefrontal region, that portion of the brain anterior to the usually accepted motor area. I have adduced some new facts in support of this view in the paper published in the *Philadelphia Medical Journal,* April 20, 1901 (cited above). Other evidence is gradually forthcoming, as in a paper by Phelps.[16] It is probable that the left prefrontal lobe has more importance as a higher psychical region than the right.

I have also long held that between the sensory and motor cerebral centers for speech exists a concept area, in which probably is a naming center. This has been located, on theoretical grounds and as the result of a few clinicopathologic observations, in the midtemporal region.[17]

The cases of so-called optic aphasia recorded by Oppenheim, Pick, Manasse[18] and others belong in the category of cases which help to demonstrate the existence of a separate concept area for names. The patients are able to see perfectly an object shown to them, but they do not know how to give it its name except by touching it or through the sense of hearing, if it is an object which gives forth a sound or if its name should be mentioned in the presence of the patient; when, for instance, the object to be named is a bell, the desired word is found when the bell is rung. According to Pick optic aphasia seems to point to the location of a lesion in the posterior portion of the second and third temporal gyri. It has been shown that meningitis or extradural abscess of the middle fossa may give rise to optic aphasia.

The observations made and the results obtained by surgeons and aurists with regard to the aphasic disturbances in otitic abscess of the left temporal lobe are of interest in discussing this concept naming center. In twenty-five cases collected by Merkens[19] word deafness was observed eight times, disturbance of repeating words twice, disturbance of writing seven times, disturbance of reading nine times, and mind blindness four times. One constant symptom, however, was found in all twenty-five cases, which Merkens designates as word dumbness (Wortstummheit), and which in addition to paraphasia is characterized chiefly by an inability to find the right names for objects. The patients recognize the objects and know their uses, but are not able to give their names, the substantives being wanting. Sometimes the disturbance is observed only in connection with optic impressions, but at times in addition from acoustic and tactile impressions.[20]

It is probable that a great general area which might be termed the concrete concept area is intercalated or placed between the various sensory percept centers and the region universally recognized as motor. This area would include the precuneus, parts or the whole of the superior and inferior parietal convolutions, and parts of the second, third and fourth temporal convolutions as indicated in the diagrams, Figs. 5 and 6. With this general concrete concept region are subareas or centers with special functions. The stereognostic center, which has already been somewhat fully discussed, is an area for the representation of concrete concepts of a relatively low type—those concepts which are obtained not directly through the senses or their motor impressions, but by processes which have been evolved from sensory and motor impressions. The center which is concerned with the attaching of names to the concepts of an object obtained through the different senses is also probably located in this region, as is also a center for object imagery. With regard to the last it must be noted that it is probable that a lesion of the center in both hemispheres is necessary for the production of those forms of mind blindness or mind deafness which indicate that the centers for object imagery are impaired or destroyed. In four of Merkens' cases, it will be recalled, that mind blindness was present.

In the construction of any new diagram of brain centers the researches of Flechsig[21] must be taken into consideration. My own views regarding cerebral localization coincide in several important particulars with Flechsig's general scheme of zones and areas. In Figs. 3 and 4 are combined two sets of diagrams given by Flechsig. The shaded areas represent in the main his primordial zones, which include projection radiations or systems, sensory and motor; the unshaded posterior area is intermediary zones, and the unshaded anterior area is terminal zones. An effort has been made in the diagram also to represent the numerous subareas or centers which have been isolated by Flechsig, thirty-six in all, but as it is not necessary for my purpose to consider these in detail they have not been numbered.

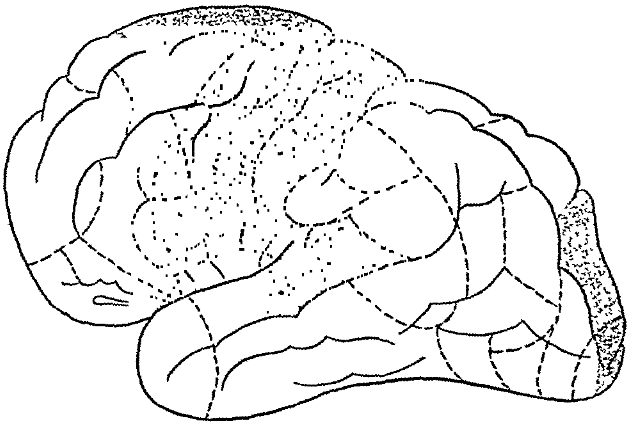

Fig. 3.—Flechsig's association areas, lateral aspect.

One of the latest and most condensed expressions of Flechsig's views is to be found in his paper presented to the International Congress of Physiologists at Turin. Flechsig holds that in the cerebral cortex, as elsewhere in the nervous system, groups of nerve fibers develop step by step in orderly succession. The stages in development are especially indicated by the period of myelinization, or the investment of medullary substance. In some cortical regions myelinization has begun fully three months before fetal maturity, while in others it has not started three months after birth. Equally important groups of fibers develop at about the same time. Clearly defined circumscribed myelogenetic areas appear at certain stages of development. At the time of the

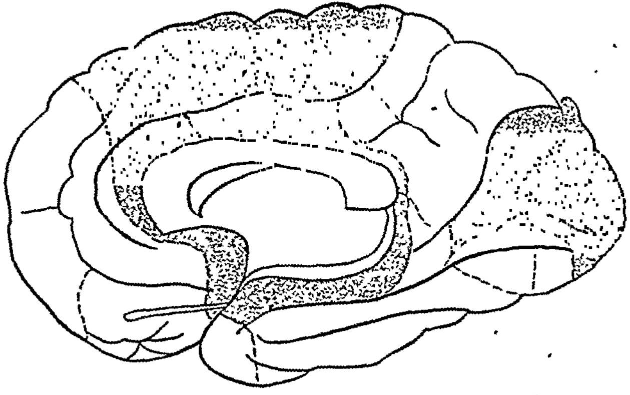

Fig. 4.—Flechsig's association areas, mesal aspect.

presentation of his paper to the Turin congress Flechsig estimated the myelogenetic cortical areas which could be sharply differentiated at thirty-six. He classifies his myelogenetic areas into three great groups: (1) primordial zones, or regions of early development; (2) intermediary zones, or regions of intermediate development, and (3) terminal zones, or regions of late development. As the most convenient method of subdivision he places under his primordial zones the areas from 1 to 10 inclusive; under his intermediary zones from 11 to 30 or 31 inclusive, and under his terminal zones the areas from 31 or 32 to 36 inclusive. He is uncertain about his area number 31, which he believes presents individual variations. Under his third or terminal zones he ranges those areas in which myelinization begins about one month after fetal maturity. According to Flechsig, "every area possesses a special anatomical position, and therefore also a special functional importance."

The primordial zones of Flechsig are composed almost exclusively of projection fibers, sensory and motor, or, to use Flechsig's own terminology, corticopetal or corticofugal. While the views of Flechsig with regard to localization differ from those of the writer, the two are in more accord than would at first sight appear. Cutaneous sensibility, muscular sensibility, and each of the special senses, has a special myelogenetic area in the cortex; so likewise movements of the body have their representation in special myelogenetic areas. Flechsig believes that for every sensory (corticopetal) path there is a corresponding motor (corticofugal) tract. He says that it may be especially remarked with regard to his myelogenetic area number one, which corresponds with some closeness to the central convolutions, that the tactile radiation is distributed mostly to the postcentral (ascending parietal) convolution, while the tract which is undoubtedly motor originates from the precentral (ascending frontal) convolution. While a purely sensory or purely motor region can not be outlined, the area has a preponderating sensory and a preponderating motor subdivision. This is in accord with the experiments of Sherrington and Gründbaum, and with the growing tendency to place the purely motor centers and zones very largely in front of the central fissure. It is probable, as I have always contended, that the sensory and motor areas are separate, although they may be side by side and show a tendency to digitate at their contiguous borders rather than to commingle. It is not likely that neuron systems will arrange themselves side by side with absolute regularity, like the lines of a map. Alongside of the auditory (cochlear) myelogenetic area in the first temporal convolution, Flechsig finds a corticofugal area or radiation which he believes may be motor, although this has not been demonstrated. The cells and fibers which constitute this radiation lie at the lower border of the first temporal and in the furrow which separates it from the second temporal convolution. Motion of the body and head immediately consequent upon auditory impressions may be performed through the intermediation of these corticofugal fibers which pass in the columns of Türck. Similarly it may be that motions like the turning of the eyes and head immediately consequent upon visual impressions may be represented in corticofugal radiations close by or in the visual zone. Motions consequent on gustatory sensations, as smacking the lips, or those the result of olfactory sensations, as sniffing, may have representation in corticofugal radiations close by or within the gustatory and olfactory areas. This, I take it, is in general terms the view of Flechsig. If this be the case, the facts do not do away with our old-time motor area. It still remains the great or main motor area representing the movements of any part and in its entirety of all parts of the body—movements which, developmentally speaking, have been called out by cutaneous and muscular sense impressions, and which may still be evoked as cutaneous and deep reflexes from skin, muscles and tendon variously situated in the body. It is the belief of the writer that the cutaneous and muscular sensory areas are close by but separate from the great motor area, while Flechsig's view seems to be that these areas partly coincide. He also inclines to the view that each myelogenetic sensory area or corticopetal radiation has a corresponding corticofugal radiation which probable represents a motor area for each of the senses in question, these sensory and motor areas coinciding or partly coinciding.

Flechsig contends with much force, much critical acumen and valuable evidence, against the idea that the cerebral convolutions in general are provided equally or nearly equally with corona radiata, that is, with projection systems. He shows the weakness of much of the reported pathologic evidence or so-called evidence respecting this matter. He holds that the clinical evidence regarding the symptoms produced by lesions of various cortical areas give results which correspond closely to those obtained by his developmental methods. "Disorders of the motor and sensory functions are observed only in lesions of the primordial zones. The motor zone delimited by Charcot coincides with area No. 1; the zone defined by Henschen (the most reliable worker in this field), lesions of which always interfere with vision, coincides with No. 4, and so on. Of localizing symptoms which occur in lesions of the intermediary and terminal zones the only known forms are some that involve, 1, interference with speech (alexia, optic aphasia, sensory amnesic aphasia, etc.), and 2, partial amnesia (optic, for example). The time to localize these symptoms more definitely has not yet arrived." It is not within the purpose of this paper to go into Flechsig's presentation of facts and arguments regarding all the important points bearing on his theory of primordial zones and of intermediary and terminal association zones.

In Figs. 5 and 6 is given a new scheme of the zones and centers of the lateral and mesal aspects of the cerebrum. In these diagrams the different regions are represented as separated by zigzag lines, to indicate the writer's view, that while the areas are entirely distinct, they have not straight map-like borders. It is inconceivable that cerebral neuron systems should, in the process of development, arrange themselves in a linear manner as is usually represented. One area or center digitates into another, so that the frontiers are always, from the functional standpoint, merging or mingling regions. The border lines are probably much more irregular than indicated by the zigzags used in the scheme. Some of the differences of opinion regarding the limits of certain functional regions, and the coextensiveness of others, are probably to be explained by their irregular borderline.

The prefrontal (higher psychical) area corresponds with the older diagrams, Figs. 1 and 2, and also practically with Flechsig's terminal zones. The motor area both in the old and in the new scheme corresponds closely with those portions of Flechsig's primordial zones which border and are some distance in advance of the central fissure; while the auditory, gustatory and olfactory centers correspond largely with other portions of Flechsig's primordial zones, as indicated by the shading. Notable differences are, however, to be observed as regards the auditory and visual areas. Flechsig's auditory area includes the posterior portion of the first temporal convolution and the retroinsular convolution. With regard to the retroinsular convolution I might say here that a personal observation made many years since[22] led me to the conviction that this was probably included in the auditory area. This was a case, now well known in the literature of the subject, in which lesions of the superior temporal convolutions on each side were present, allowing an accurate localization of the auditory center. The retroinsular convolutions in this case were greatly atrophied, justifying the conclusion then reached that these convolutions are anatomically and functionally closely related with subdivisions of the first temporal convolutions, the most posterior of these retroinsular convolutions being continuous with the posterior half or two-thirds of the first temporal convolution. The auditory center in the new scheme is therefore made to include the retroinsular convolutions. In order to show these convolutions the brain is represented as somewhat pulled apart at the Sylvian fossa in the same manner as in the diagram, Fig. 3, modified from Flechsig. The visual area is still represented as occupying a large portion of the lateral aspect of the occipital lobe including the angular gyre. Flechsig's visual primordial zone, however, reaches only a short distance over the edge of the hemisphere on its lateral aspect. The angular convolution and most of the lateral surface of the occipital lobe is contained in his intermediary zone. As higher visual processes are probably to be referred to this zone, the schemes are not entirely out of accord. It will be noted that the centers for stereognosis and naming are placed in the intermediary zone of Flechsig, the former in the superior parietal convolution, the latter in the midtemporal region, chiefly in the third temporal convolution. I have also indicated as a suggestion merely that a center for object imagery is included in this intermediary zone, but in just what part of it I am not prepared to say. It may be close by the center for word seeing. Tentatively, therefore, the object-seeing center has been placed in front of and below the word-seeing center. As already stated, bilateral lesions are probably necessary for the production of mind blindness, the symptom which is referable to destruction of this region.

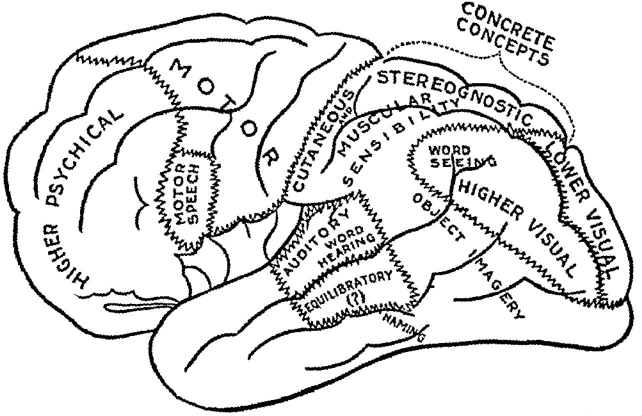

Fig. 5.—New scheme of the zones and centers of the lateral aspect of the human cerebrum.

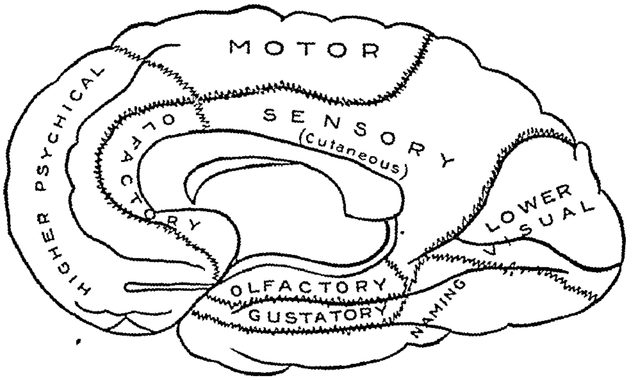

Fig. 6.—New scheme of the zones and centers of the mesal aspect of the human cerebrum.

As has been said, the general term, concrete concept area, has been given to that region which includes the stereognostic center, the naming center, and the hypothetical center for object imagery. The mental processes having their material substrata in this region which is intercalated between the various sensory systems, are such as are concerned chiefly with concrete concepts. Our concept of an object is obtained through the senses, often through the interaction of several, or it may be of all, the senses. The cerebral areas concerned with concrete concepts are, therefore, most likely to be situated in a region more or less environed by percept centers, and such is the region indicated in Flechsig's diagram as his intermediary zones, and in our scheme as the concrete concept area. Stereognosis is the faculty or function by which an object is recognized through its form without the employment of vision. The idea thus obtained is the result of a higher mental process than that by which the nature or quality of an object is recognized through common sensibility or through the special senses. The stereognostic center is higher than the percept centers; it is intermediate between these and the centers for abstract concepts which are probably located in the prefrontal region. Similarly, the mental process by which a name is associated with the concept of an object which is obtained through the different senses, is a different and a higher process than the processes which go on in the percept centers themselves. Object imagery is also a higher and more special process than that of perception, and has its special representation in the cerebrum, probably in the concrete concept sphere. Loss of power of orientation may also, in special instances, be due to bilateral lesion in this concrete concept area.

A neurologist's views with regard to localization are put to one of the severest practical tests when he is called on to locate for the surgeon a tumor, abscess, hemorrhage or other operable lesion, but if his theories have any real value they will be able to stand the test. Tumors of the brain notoriously give rise to confusing localizing symptoms, because of their compressing, invading and indirect effects, but it is quite possible in the great majority of instances, on the principles embodied in the schemes which are here under discussion, to locate such lesions with more than fair success. For at least fifteen years it has been my duty from time to time to aid in the localization of tumors for operative purposes. In spite of a somewhat general pessimistic tendency regarding operations for intracranial tumors, I am to-day more hopeful than ever before. The osteoplastic or autoplastic operation offers more hope both to the neurologist and to the surgeon than the former method with the trephine and rongeur. When this operation is skilfully performed a cerebral area of large size can be uncovered, and the bone replaced in position will usually retain its vitality.

As the result of much experience I have come to the conclusion that brain tumors show a decided tendency to originate in special physiologic regions, as in Broca's center, in the higher psychical, the motor, the stereognostic, the auditory or the visual region. In the process of growth they may and, of course, do, compress and invade other regions, and they may, of course, originate near or along the borderline between different regions, but I believe the tendency is as above indicated. This being the case, it becomes possible, with a fair approach to accuracy, to map out on the brain and on the skull regions for osteoplastic operations for many of the cases of brain tumor which are presented to the neurologist for diagnosis and to the surgeon for operative procedure. In other words, a series of syndromes or symptom-complexes can be given which indicate regions of the brain and its corresponding areas on the skull for the most frequent operations which the surgeon will be called on to perform. I shall confine myself in this article to mapping out such a series only for the lateral aspect of the left hemisphere. In Fig. 7 an effort has been made to indicate seven such regions both on the cerebral hemisphere and on the skull. These areas have been lettered A, B, C, D, E, F, and G. Necessarily, in some cases, the regions overlap. The letters have, therefore, been placed not as would be best if this overlapping did not take place (in the centers of these regions), but some place where two regions do not coincide. I shall give a syndrome for each region—this in every case but one corresponding to some symptom-complex presented by an actual patient studied for the purpose of operation. In each case, first will be given the symptoms which indicate irritation or destruction of the region under consideration, this being followed by a brief presentation of the symptoms of compression and invasion most likely to appear as the tumor increases in size.

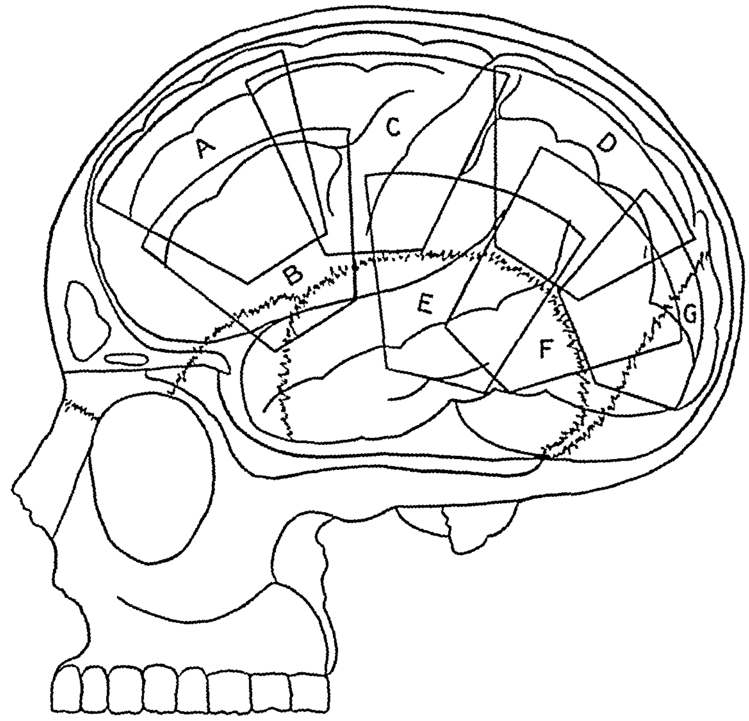

Fig. 7.—Cranial areas for osteoplastic operation, these areas corresponding to regions of the left hemicerebrum with definite syndromes.

A. Higher Psychical Area.—Interference with higher psychical processes as shown in lack of power of sustained attention, impairment of the faculties of reason, comparison and judgment; mental obtuseness; relative optimism; sometimes mild hallucinations and delusions. Among the most likely compression and invasion symptoms are motor agraphia, motor aphasia, monoplegia or hemiplegia. On the negative side are absence of anesthesia, cutaneous or muscular, astereognosis, hemianopsia, word blindness, word deafness, and paraphasia.

B. Motor Speech Area.—Motor aphasia usually associated with some motor agraphia, and paresis, especially of the face. More complete hemiplegia may indicate compression or invasion, as may also some psychical disturbance. On the negative side absence of the same symptoms as given for the area *A*.

C. Motor Area.—Monoplegia or hemiplegia, spasms usually beginning in one limb or in one side of the face, and usually either confined or more marked in the half of the body opposite to the side of the lesion. Tonic spasticity is usually present, and both the superficial and deep reflexes are much exaggerated, persistent ankle clonus and the Babinski response being present. Motor aphasia and agraphia may be compression and invasion symptoms when the tumor spreads cephalad, or affections of cutaneous and muscular sensibility and astereognosis when it increases caudad. Psychical symptoms, except those due to general cerebral irritation, and visual and auditory symptoms are usually absent.

D. The Stereognostic Area.—Astereognosis and hemiataxia, impairment of muscular sensibility and of cutaneous sensibility; the superficial reflexes usually impaired; the Babinski response not present, but the normal metatarsophalangeal response often absent, that is, the toes not moving from irritation of the sole of the foot; the deep reflexes practically normal. Frequent compression and invasion symptoms are gradually augmenting hemiparesis, gradually increasing reflexes up to the point of exaggeration, and hemianopsia. Higher psychical symptoms absent and aphasias usually absent; sensory aphasia present at times when the tumor spreads backward and downward.

E. The Auditory Area.—Word deafness, partial or complete; verbal amnesia and paraphasia. Compression and invasion symptoms may be paresis or paralysis; visual symptoms, such as word blindness and hemianopsia, and impairment of cutaneous and muscular sensibility. Reflexes usually not much altered. Higher psychical symptoms, motor agraphia, motor aphasia and astereognosis usually absent.

F. The Higher Visual Area.—Word and letter blindness and verbal amnesia. Compression and invasion symptoms chiefly auditory symptoms and hemianopsia, although astereognosis, ataxia and motor disturbances may be present. The Wernicke reaction, motor disorders and higher psychical disturbances are usually absent; and the deep and superficial reflexes in the extremities are usually not altered. The superficial reflexes are most likely to be impaired owing to the anesthesia.

G. The Lower Cortical Visual Area.—Hemianopsia often associated with forms of word blindness when the tumor is of considerable size; other localizing phenomena usually absent.

In giving the localizing symptoms for each of these areas I have purposely omitted the enumeration of the general symptoms of brain tumor, such as headache, vomiting, vertigo, optic neuritis and the symptoms of cerebral irritation—these may be present or absent, but are usually present in whole or in part. With regard to the lower visual area which is indicated as reaching back to the occipital lobe of the cerebrum close to the mesal line, it must be remembered that the centers for retinal representation are chiefly in the cortex of the calcarine fissure and the cuneus on the mesal aspect of the hemisphere, but such a growth will almost necessarily involve more or less of the posterolateral portion of the occipital lobe, and therefore can be reached if at all through the area *G* indicated.

These syndromes by no means exhaust the regions of one-half of the brain in which operations, guided by *localization, can be performed.* Other regions which might be indicated are the orbital surface of the frontal lobe, which would give especially psychical, olfactory and optic tract symptoms, and the regions in general terms comprised in the lower or inferior portion of the temporal lobe, tumors located in which would give especially concept aphasia, paraphasia and hemianopsia, and one lateral lobe of the cerebellum, the symptoms of involvement in this region giving especially unilateral ataxia and asynergia, nystagmus and compression symptoms referable to some of the cranial nerves. These additional regions can not well be indicated in a single diagrammatic scheme.

While this paper is, of course, intended to be neurological rather than surgical, it may not be out of place in concluding to make a few remarks about osteoplastic operations and the best methods of performing them. In this operation the scalp is usually cut through on three sides in the lines of the three sides of the bone flap intended to be made, as indicated in the cranial areas mapped out on the diagram, Fig. 7. The scalp is not cut through on the basal short side of the flap. The three sides of the flap can be of any size according to what are supposed to be the requirements of the operation which is to be done. After the scalp flap has been cut, the bone flap is usually made with chisels or gouges of special construction. The scalp is left in contact with the bone, except along the lines of incision. In this way a trapdoor of bone and scalp is made, which can be replaced after the operation. The vitality of the bone is maintained by the circulation through the scalp and skull. Much time is usually consumed in the chiseling process, and the hammering in some cases seems to cause serious concussion, these being valid objections to this method of operating, although not sufficient, in my judgment, to overcome its many great advantages. Personal experience also has proved to me that large osteoplastic operations made in this way can be finished successfully; tumors can be removed from the brain and the patient live for months or years. In other words, the operation does not necessarily cause permanent damage. Experience counts for much in this direction, and the surgeon who has performed the operation several times acquires a facility which adds much in the rapidity and certainty of procedure.

Instead of the chiseling process other surgeons resort to small trephinings and the use of the Gigli saw, and in a few cases the dental engine has been *used with success*. The method of connecting small trephine openings by the use of the Gigli saw is tedious. The dental engine will probably eventually come into more general use, but to be used successfully it requires the skill gained by much practice, and few surgeons have as yet acquired this skill. It is also said to be difficult to keep it antiseptic during operations.

A valuable instrument for cutting an osteoplastic flap has been devised by Dr. T. C. Stellwagen, Jr., a graduate in dentistry and a student in medicine in the Jefferson Medical College of Philadelphia. This instrument was described and the method of using it detailed in a paper read before the Philadelphia Academy of Surgery, March 3, 1902, by Dr. John Chalmers DaCosta, professor of principles of surgery and of clinical surgery in the Jefferson Medical College.[23] Dr. DaCosta experimented with Dr. Stellwagen while the instrument was being perfected, and it has been used by the former successfully in trephining a case of epilepsy in a child.[24]

In the paper of Dr. DaCosta the Stellwagen trephine is described by its inventor as follows: "The instrument, with its parts assembled ready for use, consists of a shaft pierced by an oblong quadrangular hole, through which is passed a piece of steel at a right angle, the projection of this piece of steel being regulated by a set thumbscrew. This device enables the surgeon to cut any desired size of bone-flap. The projection bar has a gear hole forged in its outer or cutting end into which fits the shaft of the movable knife and movable saws, which are used for incising the scalp and for dividing the bone. The saw may be raised or lowered to suit each case and to permit of adjustment to the inequalities of the skull, and, when once set, may be clamped by a thumbscrew. Several different forms of bone-cutting instrument were tried at various times on the cadaver, but were discarded as being conspicuously inferior to the saw." The reader is referred to the paper of Dr. DaCosta for full details regarding this most promising device of Dr. Stellwagen. Much, of course, will depend on the skill and care with which it is used, but I believe that it is another valuable addition to our means of coping with brain tumors.

In connection with the study of a case on which it was proposed to use this trephine, I made some observations on the regions which could be covered by it in operations. It can be so used as to include practically the regions marked out in our diagram, Fig. 7. If, for example, the pin of the trephine is placed the fraction of an inch in front of the cranial line which corresponds to the central fissure and the arm is so arranged as to give a radius of about one inch, and two-thirds or three-fourths of a circle is drawn, leaving an unfinished open space below, or preferably below and somewhat forward, the motor region and a little more would be well covered. According as the symptoms referable to leg, arm or facial regions are more pronounced, the upper extremity of the circle could be placed near or more and more removed from the mesal line. Similarly, by selecting proper points with reference to the mesal line and the anteroposterior line of the skull for the insertion of the pin of the instrument, all the regions which have their superior border near the mesal line of the skull could be readily marked out, and the same, of course, could be done for other regions by carefully selecting the position for the central pin guided by well-known cranial landmarks.

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23. Since the meeting of the American Medical Association at Saratoga in June, 1902, this paper has been published in the *Annals of Surgery*, July, 1902.
24. It was also used in part since the reading of this paper in a case of brain tumor on which Dr. Deaver operated for the writer.

DISCUSSION.

Dr. J. H. McBride, Los Angeles, Cal.—In one of the figures that the Doctor showed, a part of the superior parietal lobe was marked sensory, though in his remarks I understood him to say that he held that sensory localization was in the limbic lobe. I wish when he closes the discussion he would re-state his position on this point. He spoke of the sense or faculty of orientation. May loss of this faculty be simply functional? I have supposed so from a case of mine that recovered.

Dr. William J. Herdmann, Ann Arbor, Mich.—I would like to ask the Doctor whether Flechsig has stated absolutely that there are no projection fibers from the frontal association region.

Dr. Mills, in closing—I have not yet changed my views regarding separate sensory and motor localization, but recent additions to our knowledge, especially some of the investigations of Flechsig and some observations by myself and my colleagues in Philadelphia have led me to believe that there are special subdivisions of the region formerly designated as sensory. Probably the representation of cutaneous sensibility is largely in the limbic lobe, that of the stereognostic sense in the precuneus and its lateral correlative, the superior parietal convolution (parietal of Wilder), while the muscular sensibility is represented in parts of the superior and inferior parietal convolutions. The researches of Sherrington and some other recent observations tend to show that the motor region is in very large part, cephalad of the central fissure, and it may eventually turn out that the muscular and cutaneous sensibility is in part represented in the post-central convolutions. These were some of the points intended to be conveyed by my remarks.

With regard to Dr. Herdmann's question, the researches of Flechsig would seem to show, notwithstanding the antagonistic observations of Dejerine and others, that the prefrontal region —the terminal association area of Flechsig—was without any projection system. My views regarding the visual center or area have not undergone any marked change. I believe that the representation of homonymous fields is in the cuneus and the first occipital convolution on the lateral aspect of the hemisphere, and that the higher forms of visual representation, such as word seeing and letter seeing, are more anterior in the occipital region.

Enteric Fever Prolonged War.—At the Sanitary Science Section of the British Medical Association at Manchester, England, September 11, the presiding officer, Sir James Crichton Browne, M. D., emphasizing the necessity for reform in the sanitary organization in the British army, said enteric fever during the South African war had reduced the fighting force by from 70,000 to 80,000 men. But for this the war would have been ended six months earlier and $300,000,000 to $350,000,000 would have been saved. He emphasized the fact that the prevention of this loss was one of the most important advances in increasing the efficiency of the army that could be made.

ETIOLOGY OF CHRONIC NEPHRITIS.[*]

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Premise: All nephritis is toxic in origin, produced by the action on the kidneys of chemical or microbial toxins.

Under the name chronic nephritis are described slow inflammatory processes affecting both kidneys, due to a pathologic condition of the blood and leading to destruction of the parenchyma, with eventual shrinking of the organs. The most characteristic phenomenon of this affection, as pointed out by Senator, is not its termination in atrophy, but its casual relationship with hematic dyscrasia, for atrophy is met in other renal disease, as, for instance, in ascending nephritis. The cleansing of the blood of its impurities devolves mainly on the kidneys and it seems, therefore, evident that an abnormal condition of that fluid must be the chief source of renal affections. What the special form of hematic dyscrasia is that gives rise to lesions of the kidney, remains as yet unknown. It seems plain that the morbid agent or combination of agents is not the same in all cases. Semmola's theory of an abnormal diffusibility of the blood serum, has proved entirely inadequate. It is probable that a much more complex anomaly of the blood exists.

In those comparatively rare instances where chronic nephritis develops as a result of acute nephritis, the chronic lesion must be due to the same common cause as its acute precursor, the lesion being perpetuated long after the cause has ceased to exist. This is the case, for instance, in the chronic nephritis, subsequent to scarlatinal and puerperal nephritis. Jawein has suggested as a possible explanation of the fact that nephritis may continue on its course even after cessation of the determining cause, that the remaining amount of healthy renal parenchyma is not sufficient for the purification of the blood and consequently the products of disintegration may be in such relative excess as to exert a deleterious effect on the remaining structure. The issue of acute nephritis of infectious origin in chronic nephritis is, however, comparatively rare, the rule being death or recovery in the course of weeks or months. The form thus originated is usually chronic tubal nephritis.

Interstitial nephritis, unlike tubal nephritis, is essentially a chronic malady from the start. Formerly the belief prevailed that all interstitial nephritis was simply tubal nephritis in its final stage. This can not be so in all cases, because tubal nephritis, progressed to the stage of contraction, must, at some time in its course, have been accompanied by definite symptoms of grave illness, especially dropsy. On the contrary, we find the majority of cases of interstitial nephritis presenting no sign of dropsy or other grave disturbance of health until the development of retention symptoms or evidences of cardio-vascular embarrassment. Such cases are examples of primary renal cirrhosis, true chronic interstitial nephritis, in which the connective tissue seems to be the starting point of the morbid process, only secondarily leading to atrophy of the parenchyma. It is possible that if acute nephritis lasted long enough it might lead secondarily to a form of interstitial nephritis, but whether the disease known as chronic interstitial nephritis could result is another question.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

Admitting the possibility that acute parenchymatous nephritis might, under certain circumstances, end in granular kidney, West[1] declares his failure after prolonged and careful observation to establish such a connection and quotes Kauthack in agreement with himself. The end product of such an association would be contracting white kidney or secondary contracting kidney and not the small red kidney or true interstitial nephritis. Even if acute nephritis can be established as an event in the early clinical history of a case, it does not necessarily follow that prior to the attack the kidneys were sound. Although the symptoms of chronic interstitial nephritis become pronounced, as a rule, in middle life, the insidious development of the disease renders it extremely probable that it has existed long before, and it is not uncommon, in the course of such a case, to observe acute nephritis develop. Simple acute nephritis in adults is comparatively rare and when it does occur it is usually an acute inflammatory process, superimposed upon an already existing lesion, generally of interstitial character. Just as in a child, acute nephritis raises the presumption of antecedent scarlatina, so in the adult it may almost be regarded as presumptive evidence that the kidney has been diseased beforehand. In those rare cases of renal cirrhosis in which an apparent relationship with scarlatina or pregnancy exists, it is possible that these factors determine the renal lesion only in conjunction with accessory causes of toxic character.

Gull and Sutton's contention that chronic interstitial nephritis is but one expression of widespread arteriocapillary fibrosis receives little support at present, abundant proof existing that contracting kidney is chiefly produced by causes which operate especially and in the first instance upon the kidneys and not indifferently upon the body as a whole. According to Leyden, these two affections are not without connection, but Wagner, Rosenstein, Dickinson and Furbringer do not share this view. The renal sclerosis subsequent to arteriosclerosis is exceptional in comparison to the cases in which the vascular changes are secondary with genuine chronic nephritis as their origin.

It is probable that only in those rare cases of chronic indurative nephritis associated with advanced senile arteriosclerosis are we warranted in attributing a purely etiologic influence to the arterial changes, the association of arterial fibrosis with renal atrophy in other cases being coincidental, produced by the same underlying toxemia or secondary and directly due to the nephritis. In any true nephritis it is the gland that is primarily affected. It is there the mischief starts and the subsequent atrophy is not produced by disease of the arteries, but results from irritation, which the kidney has been unable to withstand, the arterial and fibroid changes developing as part of the morbid process. Histologically considered, the morbid changes of chronic nephritis differ not in kind, but merely in degree from those of acute nephritis. An etiologic unity may be said to pervade all forms of nephritis, the common cause being toxic irritation of the kidney, with this difference, that in the chronic forms it acts more slowly or by successive attacks.

During recent years the advance of our knowledge regarding the nature and action of organic poisons has led to a much better understanding of the causation of secondary degenerative lesions. The position seems entirely tenable that noxious substances constituted by active agents or various bodies developed by altered tissue metabolism in the economy or introduced from without, by their elimination through the kidneys, produce at length lesional changes in those organs. Examined in the light of this hypothesis, the mode of action of various determining causes of nephritis seems to be satisfactorily defined. Among these causes may be enumerated the disturbances of nutrition, such as gout, chlorosis, diabetes, syphilis, the various cachexiæ, overwork, etc., and diseases involving certain excretory organs, as chronic skin diseases, hepatic and intestinal affections. Considering the operation of certain of these factors, we find nephritis in gout resulting mainly from the elimination of toxic bodies, produced by the hepatic insufficiency, which almost invariably underlies or accompanies the gouty diathesis. The frequent association of nephritis with diabetes may be said to be due to the acid toxins and organic extractive matters, resulting from excessive destruction of albuminoids in that disease. Nephritis following upon chlorosis is recognized as being due to irritation from excretory bodies, produced by excessive albuminoid metabolism, combined with insufficient oxidation and in much the same way pernicious anemia and leukemia may bring about granulo-fatty renal changes. Light is thrown upon nephritis subsequent to chronic skin diseases, by remembering that a dermatitis or severe burn may give rise to renal inflammation by causing the elimination via the kidneys of substances normally carried off by the skin. The chronic nephritis, which occurs during the progress of the cachexiæ, is, according to Gaucher, brought about by toxic alkaloids due to faulty oxidation which are eliminated by the kidneys and cause a high degree of irritation. The nephritis of cancerous subjects is explained by Klemperer in this manner: The uniformity of action of these factors may be recognized at a glance. None of these conditions can exist for any length of time without producing grave interference with nutrition, with resulting formation of irritating toxins, which, in their passage through the kidneys, cause congestion, increased cellular activity, degeneration or necrosis. The urine abnormities under such circumstances are but symptoms of an underlying toxemia produced by the antecedent malady.

While it is thus comparatively easy to interpret the etiology of chronic nephritis secondary to some disease process which stands in direct relationship to it, there remains the large class of primary chronic nephritis which does not offer the advantage of so easy an explanation, having no definite association with antecedent morbid perversions. This class of nephritis, comprising chiefly primary interstitial nephritis or granular atrophy of the kidney, is of extremely insidious development and must depend upon the operation of some cause of very gradual and persistent character. Certain alterations in the vascular system, which are an almost constant feature of the syndrome of this disease, are no doubt in the main contemporary with the renal change and produced by the action of the same irritant as causes the latter.

Various theories have been advanced to explain the pathogenesis of this form of nephritis. Among recent explanations is that of Croftan, who attributes the arterial and renal change of gout and arteriosclerosis and plumbic nephritis to the action of alloxuric bases formed in excess as the result of faulty oxidation and perverted hepatic action.

In the opinion of the writer no cause is so frequent and important in the causation of primary contracting kidney as autotoxemia of digestive origin. The idea is by no means a new one, having been suggested long since by Murchison, who regarded lithemia arising from functional derangement of the liver as one of the first links in the chain of causes tending toward chronic nephritis. Johnson more nearly approximated the modern understanding of digestive autotoxemia, by maintaining that the proximate cause of chronic nephropathies depends upon a morbid condition of the blood and that the vitiated products of abnormal digestion absorbed into the blood were to be reckoned among the chief of the toxic agencies bringing about the nephritis. Many authors of more recent day have referred to intestinal autotoxemia as a possible source of renal damage, but the full extent of the relationship has perhaps never been stated. The influence of the condition of the gastro-intestinal tract upon the welfare of the kidneys is impressed upon every observer in the management of chronic nephritis. The success of the dietetic treatment of nephritis, which is recognized on all hands as the rational procedure, the importance of Dickinson's "morning purge," the effect of colonic irrigation upon renal elimination, the influence of gastro-intestinal "accidents" in aggravating the renal symptoms—these and many other facts speak for the importance of a clean digestive tract. A just appreciation of the influence which digestive disturbances exert in the etiology of nephritis has been confused by the fact that the early history of the disease has been prejudiced by a *post hoc,* rather than a *propter hoc* interpretation of the dyspepsia so often a feature of the clinical history.

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[1] British Med. Jour., 1899, vol. 1.

The early symptoms of chronic nephritis are not infrequently equally characteristic of gastro-intestinal derangement—coated tongue, eructations, abdominal discomfort, constipation, pain in back, oxaluria and excess of indican in the urine. Excessive putrefactive and fermentative processes in the intestine produce various irritating decomposition bodies, chief of which are the members of the aromatic sulphuric acid group and the aromatic oxyacids. The liver appears to be the vestibule of all toxic and infectious agents, alimentary and digestive poisons absorbed from the bowel, and if for any reason its protective action prove inadequate, these irritating bodies gain access to the blood and are presented to the kidneys in excess. In chronic gastrointestinal affections an increased amount of work is imposed upon the liver, with the result that the liver cells become gradually and progressively affected and eventually yield to irritation and prolonged hyperfunction, allowing the poisons that reach it from the bowel, together with the products of disturbed hepatic function, to pass on into the general circulation. Disturbances of vascular tension follow the presence of these bodies in the blood stream, and a high degree of renal irritation results from their elimination in the urine.

Chronic interstitial nephritis is of most frequent occurrence among persons leading sedentary lives and who suffer from the effects of hypernutrition. Many such subjects suffer slight disturbances of the alimentary canal without considering themselves sick, yet they are often found to be voiding urine, which, when injected into animals, proves to be decidedly toxic. A condition commonly encountered in these individuals is atony of the gastrointestinal tract, which invariably results in some degree of coprostasis with excessive putrefactive changes and the absorption of irritating toxic bodies. The question might be raised that the atony and intestinal catarrh may be due to uremic elements, which the kidneys fail to eliminate and which irritate the intestinal mucosa in the process of their removal or which act upon the nerve cells and vascular area of the stomach and bowels. Admitting the fact that indigestion of uremic origin is a frequent accompaniment of well-developed nephritis, the value of digestive autotoxemia as a prodrome and cause of the nephritis, is not lessened. The gastrointestinal condition very frequently will be found to be of ancient origin, long preceding the least suspicion of nephritis and more frequently than not, having its origin in constipation. The systemic effects of constipation are difficult to gauge, for many persons in seemingly perfect health have, throughout their lives, been the victims of marked constipation. These cases are the exception, not the rule. Fecal stasis favors the growth of organisms, never absent from the bowel, and nutrition may be seriously impaired by their turning to their own use the products of digestion and leaving only degradation products inadequate or wholly unsuited for the purpose of metabolism. Habitual constipation may, in this manner, favor a dyscrasia, which, on the one hand, in its full development, results in a "fecal anemia," and as well, in more latent obscure fashion, gives rise to cirrhotic changes in the kidneys from prolonged irritation. Poisoning of this kind is usually a very chronic and insidious process, often causing no subjective symptoms until renal inadequacy has advanced so far that the dyscrasia becomes intensified and various constitutional disturbances result. That such a cause may operate over long periods of time to the entire ignorance of the patient, is demonstrated in clinical experience by the prolonged occurrence of cylindruria and excessive elimination of aromatic nitrogenous bodies in the urine of patients seemingly healthy. Such, in a general way, is the action of autotoxemia upon the renal function. When secondary gland changes have resulted, they, in their turn, determine a retention within the economy, of large amounts of toxins, to which may be attributed as a result that group of phenomena usually included under the title uremia.

In the foregoing brief discussion of the etiology of chronic nephritis, my efforts have been confined to an attempt to extract the principle, which underlies the wealth of observation, which has accumulated about the subject. In so doing many considerations have been passed over and the conventional arrangement of the subject has been neglected. The single purpose of what has been written is to emphasize the overwhelming importance of the toxic element in the causation of all nephritis and the uniformity of action of the toxic factors, whatever special form they may assume.

THE CLASSIFICATION OF CHRONIC NEPHRITIS.*

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No serious, at least no successful, attempt has ever been made to classify cases of chronic nephritis from the standpoint of etiology. Morbid anatomists and pathologists are far from unanimous in their descriptions of the various types or groups of this disease. And physicians are not always able to make a differentiation that is satisfactory from the clinical point of view or that holds good in the light of postmortem revelations. Yet it is important that we have some working classification, even though it be somewhat faulty and largely artificial.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

The present paper, making no pretense of new suggestions in this respect, is an attempt merely to epitomize the main facts already known concerning this confusing subject.

While a historical review of the subject would be interesting and instructive, it must be omitted because of the time limit set to these papers, and it might do little more than to show us the confusion of ideas held from the time of Bright (1827) down to the present. In 1867 Rindfleisch declared that "the pathological anatomy of the kidney is certainly the subject which has stimulated the most investigation, and yet to-day it is the least complete chapter of the whole work." And Bartels,[1] a little later, besides quoting with approbation the sentence from Rindfleisch, adds that "it is apparent that the doctrine of the diffuse renal diseases can not be regarded as settled from any point of view." And Senator,[2] writing in 1896, says that "an agreement on all points concerning Bright's disease has not yet been reached."

Yet from out the confusion some semblance of order appears and there stand forth certain facts that permit of arrangement into an approach to orderly grouping. First it may be stated that the kidney of congestion is, by common consent, ruled out of the category of the nephritides and of Bright's disease. Traube made it clear that it was not an inflammation. Rokitansky, Traube, Virchow and others likewise excluded amyloid kidney, which is now rarely classed as a form of Bright's disease or as an inflammation of the kidney, though it is recognized as occurring not infrequently in connection with or as a complication of a true nephritis.

There remain two groups whose clinical features present such striking contrasts that one feels warranted in making of these groups separate classes. The justification of this seems apparent when one sees that corresponding to these two types are found kidneys differing as markedly as do the clinical manifestations.

Now it is important, of course, that the names used to designate these two different kidneys should be as accurate as possible in describing the actual pathological condition present. But it is really of greater importance that the fact of the existence of these two types should be clearly recognized, no matter what name be given. To the one form, characterized by edema and abundant albuminuria and cylindruria the name chronic parenchymatous nephritis has been most often applied; to the other, with its marked cardio-vascular changes, its relatively slight albuminuria and cylindruria, with its abundant urine of low specific gravity, etc., the term chronic interstitial nephritis is given. As synonyms for the former may be mentioned large white kidney, large yellow kidney, chronic desquamative and chronic tubal nephritis, etc.; for the latter contracted kidney, cirrhosis, sclerosis, granular atrophy, gouty kidney, etc. The former is the large, rather soft kidney, pale or darker, depending on the amount of fatty degeneration, with easily stripping capsule, wide cortex and with changes chiefly in the parenchyma, the tubular and glomerular cells. The kidney of the second class is the small, rough, firm kidney, with adherent capsule, granular cut surface, thinned cortex, retention cysts and with great increase in the connective tissue, the interstitium.

While these are types and while these types are seen with all their classical, text-book features, both at the bedside and on the autopsy table, great variations from the type are frequently met with. This has led to the naming of subclasses and varieties, tending in general toward complication rather than simplification. Now, on close examination, it is seen that the names parenchymatous and interstitial are in reality misnomers, for with every parenchymatous nephritis the interstitial tissue is also involved and parenchymatous changes are seen in every case of chronic interstitial nephritis. The process is in reality a diffuse one—a chronic diffuse nephritis. In the one case the parenchyma is chiefly, perhaps primarily, involved, and there is no induration or contraction; in the other, the interstitial structure shows the chief, perhaps the primary, change and there is contraction or induration. Hence we have Senator's two classes of (1) chronic diffuse nephritis without induration, (2) chronic diffuse nephritis with induration. But in practice the cases do not permit of such easy distribution into appropriate pigeon-holes as one might think. The pathologist often refuses to say more than that there is a chronic nephritis, and the clinical manifestations may be a mixture of the findings of the two classes. How often do we see cases with moderate edema, urine quite rich in albumin and casts, about normal as to amount and specific gravity, the cardio-vascular changes marked, perhaps also an albuminuric retinitis. Clinically it is a hybrid; postmortem it is in the mixed class. We must be content with the diagnosis of chronic nephritis or chronic diffuse nephritis. Over and over again I have seen Chiari of Prague, one of the acutest diagnosticians of gross morbid anatomy, make the diagnosis of *morbus Brightii chronicus,* refusing to attempt to classify the specimen. This point, it seems to me, deserves especial emphasis, for I am sure much energy is wasted and much needless disappointment experienced in the attempt to make a given case fit into a classification that is largely artificial and necessarily imperfect. It is better for teacher, student and practitioner to have a frank understanding on this point and to realize that disease often refuses to conform to the picture of the classical type.

This existence of the mixed forms, i. e., the failure of the disease to conform strictly to a definite type, is recognized by many writers, although many still feel urged in every case of [illegible] he impossible and make a typical ca[illegible] one. Virchow, in his Cellular P[illegible] of his three forms of Bright's disease, sa[illegible] varieties do not always occur as well-defined varieties, clearly distinct each from the other; it is more apt to be the case that two or even all three of these forms occur at the same time and in the same kidney." Bartels[4] says there are cases in which these forms are combined with one another in a variety of ways." Senator is explicit in his statement that one must often rest content with the diagnosis of chronic nephritis, not pretending to state the variety. Dieulafoy[5] makes three groups: 1, chronic nephritis with a large kidney; 2, chronic nephritis with a small kidney; 3, an intermediate form, which is the common form of Bright's disease. The same recognition of the mixed type is made by Welch in Flint's Practice of Medicine.

In some cases the view of Frerichs and of Reinhardt that the contracted kidney is a later form of the parenchymatous seems to be confirmed. At the bedside this transformation of a chronic parenchymatous nephritis into the chronic interstitial is occasionally seen, and postmortem a condition of secondary contraction is recognized. If we preserve the term chronic interstitial nephritis for the indurated or contracted kidney it might be well to adopt Riesman's[6] expressions, secondary interstitial nephritis for this form and primary interstitial nephritis for the slowly developing, insidious, cardio-vascular, typical contracted kidney.

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[1] Bartels: Ziemseen's Encyclopedia (Translation), xv, p. 187.

[2] Senator: Die Erkrankungen der Nieren. Nothnagel's System, xix, p. 154.

[3] Quoted by Bartels, loc. cit., p. 182.

[4] Loc. cit., p. 190.

[5] Dieulafoy: Manuel de Pathologie Interne, ii, p. 26 et seq.

As a subhead under chronic interstitial nephritis should be placed the arteriosclerotic kidney with its striking local vascular changes that are but a part of a more general arteriosclerosis. This can generally be recognized at the autopsy and can be suspected and permits of a probable diagnosis during life, particularly in the aged.

The classification, then, that seems to me the best is practically that of Senator. It is one that appeals to the clinician as well as to the morbid anatomist. The term "parenchymatous" can be used in place of "diffuse without induration," because, though not literally expressive of the true condition which is more or less diffuse, it recognizes what is true, that in this form the parenchymal changes predominate; they are quantitatively greater than in the second variety, where the process, while diffuse, produces chiefly interstitial or stromal changes with resulting induration. The classification would be as follows:

1. Chronic parenchymatous nephritis. (Chronic diffuse nephritis without induration.)
2. Chronic interstitial nephritis. (Chronic diffuse nephritis with induration.)
    - *a.* Primary chronic interstitial nephritis.
    - *b.* Secondary chronic interstitial nephritis .
    - *c.* Arteriosclerotic kidney. (Arteriosclerotic interstitial nephritis.)
3. Mixed type, i. e., a combination of 1 and 2.

(The Symposium on Nephritis will be concluded by the papers of Drs. Kelly, Bishop and Riesman and the discussion.)

OPEN-AIR TREATMENT OF TUBERCULOSIS: TENT LIFE IN ARIZONA.[*]

R. W. CRAIG, M.D.
PHEONIX, ARIZONA.

With an early diagnosis and proper treatment most cases of pulmonary tuberculosis should recover. That the disease is curable, is to-day generally recognized by medical men, and pathologists are constantly demonstrating at the postmortem table that no disease gives stronger evidence of healing tendencies than tuberculosis. Boudet of Paris recently reported 138 autopsies in which 117 revealed cicatrices of healed tuberculosis. Clinical reports from the modern open-air institutions largely confirm these statistics. The latest available information from Nordach in the Black Forest, Kimberly, South Africa, the Adirondack Cottage Sanitarium in New York, and others, show that from 20 to 35 per cent. of all cases admitted are absolutely cured as proven by the absence of bacilli, a return to good health and the resumption of the ordinary vocations of life. These clinical reports do not adequately represent the actual percentage of recoveries. By far the largest number of cases that recover are never recognized during the course of the disease and are only revealed at the autopsy. As a matter of fact from 60 to 73 per cent. of all cases of pulmonary tuberculosis recover as proven by autopsies where death has been the result of other causes.

In every case of pulmonary tuberculosis are found two conditions: one caseation with subsequent tissue destruction and more or less mixed infection; the other fibrosis, cicatrization and healing, the ultimate result in a given case depending on the resistance of the individual and the capability of the body to restrict and limit the growth of the bacilli and consequent extension of the disease. To produce and strengthen these capabilities must be the aim of all curative treatment, whether it be by specific medication or by open-air treatment.

The status of specific medication in tuberculosis is, to say the least, uncertain. It can at best be regarded as but an auxiliary to a natural hygienic and diatetic treatment. As yet there has been no indisputable evidence of benefit derived from the use of the serums or tuberculin except for diagnostic purposes. The great problem in the cure of tuberculosis is that of nutrition, and any drug that has a tendency to disturb the action of the digestive apparatus is positively contraindicated, and my personal observation leads me to believe that more damage has been done by the indiscriminate use of creosote, guaiacol, ichthyol, etc., than has benefit been derived. To my mind the open-air treatment is ideal, and the results derived from it are certainly most gratifying.

The principles which this treatment recognize as of vital importance, without which all else is useless, are comprised in the essentials to perfect animal life, viz., pure air in unlimited quantities both day and night, good food and plenty of it, and, as nearly as possible, complete repose. How and under what climatic conditions these principles may best be applied is the object of this paper.

DIAGNOSIS.

Early diagnosis is of supreme importance, and is much more frequent in the past few years than formerly, as shown by the relatively large number of incipient cases that are sent to our health resorts. There is no good reason why pulmonary tuberculosis should not be recognized in the prebacillary stage and before a cough has developed. The malaise, anorexia, gastric disturbance, evening temperature and night sweats and the reaction produced by tuberculin are as characteristic and classical of tuberculosis as is a cough accompanied by bacilli. If a case of tuberculosis is recognized within the first few weeks following the infection and placed under the best possible hygienic surroundings, in a climate where an absolute outdoor life can be followed, the chances of recovery are good. If the diagnosis is not made until a secondary infection has supervened, and night sweats, rigors, fever and profuse expectoration are pronounced, a change of climate and to the best possible conditions seldom afford much improvement. All our efforts should be made toward the early detection of the disease, as in that and that alone lies our only real success in treatment.

INSTRUCTION OF PATIENTS.

The patient should be fully acquainted with the nature of his ailment, as much for his own safety as for the protection of others. It is not possible to properly treat a patient for tuberculosis who is not fully aware of the nature and gravity of the disease. Rules made for his guidance will not be obeyed unless he knows what is the matter with him and that their violation will be invariably followed by disastrous results. Again. unless a patient understands the serious nature of his disease he will stop treatment as soon as he feels a little better, thus greatly reducing his chances of recovery. No harm can come from telling a patient that he has tuberculosis and explaining to him that it means a persistent, continuous struggle for his existence for a long period of time, perhaps ranging from two to five years. He will soon recognize that his welfare depends largely on his efforts and will become a good patient, where otherwise he would be an indifferent one.

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[6] Hektoen and Riesman: An American Text-Book of Pathology, p. 942.

[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

The mode of life of the patient demands unremitting attention. It is easily possible for a patient unwittingly to do himself more damage in half a day than can be repaired in a month.

Much has been said on the question of exercise for pulmonary invalids, and its value has been maintained by many of our best phthisio-therapists. Indeed, I believe 75 per cent of the tuberculous patients that come under my observation have been advised by their local physician "to get out and rough it," which is certainly the worst advice as a whole which they could receive. Detweiler, and in more recent years Brehmer, along with most of those authorities who have had extensive experience in closed institutions, condemn exercise except under the most rigid supervision and restriction. I believe that almost every so-called cold to which tuberculous patients are subject can be traced to a recent overexertion. Any exercise or exertion which produces fatigue with subsequent malaise, anorexia, elevation of temperature and general depression, is a positive and decided injury and should be prohibited. When the temperature in the evening reaches only 99½ to 100 short walks or drives may be allowed in the morning when the temperature is normal or below, but an evening temperature of 100½ or 101 is an absolute contraindication to exercise. This rule has been strictly enforced by Anderson of Colorado Springs for many years with most excellent results. Frequently patients will be met who have little or no temperature, but a marked degree of tachycardia, which is an even greater contraindication to exercise than is a temperature.

CLIMATE.

When a diagnosis has been made and the patient has been fully instructed as to the nature of his ailment, and the mode of life which he should pursue, the question of climate becomes all important. Not that any particular climate has specific action on pulmonary tuberculosis, but in what climate can he obtain the best result from an outdoor life? Where can he get the most sunshine, the most equable temperature, the least humidity and air free from bacteria.

Humidity.—In a consideration of the individual factors contributing to climatic conditions, temperature, relative humidity and amount of sunshine probably have first place. Altitude does not seem to have any particular influence on the disease, and it is questionable whether the benefit derived from a residence in a high altitude is not due primarily to other causes, notably dry air and improved hygienic surroundings. That the assimilative powers are temporarily stimulated can not be questioned, but whether the improvement is not more than balanced by the over-nervous stimulation and tachycardia produced is open to question. In the active stage of the disease a high altitude certainly is disadvantageous on account of the increased amount of work thrown on an already weak organ, and the constant irritation produced by the unnecessary expansion. The compression theory advanced by Murphy at a previous meeting of this association seems to me to be logical, and in those cases that have come under my observation where a pleurisy with effusion follows a tuberculous infection I have never aspirated the chest unless the amount of fluid was so great as to cause immediate danger from pressure. In all of these cases the tuberculous infection of the lung has been cured or arrested. A low relative humidity is apparently a very potent factor.

In northern Siberia, the plains and plateaus leading up to the Rocky Mountains in America and the great interior plateau of central Africa the disease is comparatively rare, and clinical evidence has taught that, other conditions being equal, tuberculous cases improve much more rapidly and a greater percentage of recoveries is found where the air is dryest, and by common consent it has become to be recognized as the most essential element that goes to make up the ideal climate for pulmonary tuberculosis. The lack of moisture in the atmosphere, as reported by the United States Weather Bureau, at some points in Arizona, New Mexico and the eastern part of southern California, is truly surprising. At Phoenix, and a few other places in the arid regions, it is not uncommon for relative humidity to read less than 10 per cent., as compared to 60 and 80 per cent. in the eastern and Pacific coast cities, and in June, 1901, the United States Weather Bureau at Phoenix reported the humidity as inappreciable. The annual average rainfall is correspondingly low, not generally exceeding six to eight inches.

Sunshine.—The value of a maximum amount of sunshine can hardly be overestimated, as the temperature and humidity depend to a large extent on it. The mental condition of the average tuberculous subject corresponds very closely to the barometer, and when the day is cloudy and the humidity great he is depressed and melancholy; when the sun is bright his spirits rise and he wishes to be out of doors as long as possible. The entire area comprised in Arizona, New Mexico and southern California has an unusually great amount of sunshine as compared with the eastern states. During the month of November for several years at Phoenix the average daily sunshine was more than nine hours. In 1901 there were but ten entirely cloudy days observed at several points of observation in Arizona by the United States Weather Bureau.

Temperature.—Temperature in itself is not so important except as to its bearing upon humidity and the total amount of sunshine in relation to the amount of time allowed the patient to spend out of doors. On the whole, an even high annual temperature is perhaps best for the majority of cases. The temperature of this region, and of Arizona in particular, is higher by an average of fifteen to twenty degrees in summer, and thirty to forty degrees in winter than in the north central states, yet the relative humidity is so low in summer that the sensible temperature is five to ten degrees lower; that is, the sensibility of the human body to heat is really less in Arizona than in Illinois. A temperature of 110 in Arizona is much less unpleasant than a temperature of 90 in Chicago. The annual mean temperature for the western division of Arizona for 1901 was 73.7 degrees, which is sufficiently high to allow the patient to live out of doors or in a house tent the entire year.

TENT LIFE.

The best results obtained in treating pulmonary troubles in Arizona, particularly in the region surrounding Phoenix, has been by what is practically an outdoor existence on the desert in the foot hills which extend to within six miles of Phoenix. When carried out under intelligent direction the results are in marked contrast with those cases that are so frequently seen in the boarding houses and hotel parlors. These cases do best when kept very quiet, and good food properly prepared is absolutely essential to improvement. The patient should have a good tent house, about 18x20 feet in size, which can be easily partitioned, making two good rooms. The tent should be boarded up about three feet from the ground and have a tight floor. A fly should be stretched over it in order to more thoroughly protect it from the rain and the direct heat of the sun. The sides should be detachable, so that they can be raised and lowered, something like awnings, to allow the best ventilation. These tent houses should be placed a few hundred yards from some ranch house where good board may be obtained, and the patient is ready for the winter as well as having the coolest possible residence for the summer. This nomadic method of living is mentally entertaining and physically refreshing. By it the digestive organs functionate to the highest degree, and the cells and tissue attain their highest reparative power.

Clinical Report.

REPORT OF A CASE OF A UNIQUE FOREIGN BODY IN THE STOMACH; GASTROTOMY; RECOVERY.[*]

JOHN CHADWICK OLIVER, M.D.
CINCINNATI.

Vendetta R., 10 years of age, resided in Somerset, Ky. On Nov. 17, 1901, she found a persimmon tree loaded with fruit which had just been cut down. It is supposed that she ate largely of the fruit, but no one knew positively in regard to it because she was not under observation at the time.

In the evening the patient suffered from severe gastric pain and discomfort. Ordinary home remedies were used to allay this, but as they failed to produce any effect a physician was called the next morning. In answer to his questions the patient acknowledged that she had eaten five persimmons and that she had swallowed some seeds. An emetic was administered which caused some persimmon seeds and other matter to be vomited. The emesis did not give the expected relief from pain.

An examination of her abdomen at this time revealed a hard lump in the epigastric region. Cathartics were given and the emetics were repeated, but the lump remained even though the vomiting was free and the bowels moved very well.

The patient was now sent to Cincinnati for treatment. She was first seen by Dr. J. M. Withrow, who kindly referred her to me on Dec. 5, 1901; that is, eight days after the experience at the persimmon tree. The only complaint the patient made at this time was of stomach ache. She did not suffer from nausea or vomiting. Her bowels were evacuated in a normal manner and her general appearance was excellent.

Examination of the abdomen revealed a hard mass in the epigastric region. This extended beyond the median line to the right, and under the ribs on the left side. It was not tender on manipulation. The lump would change position with the movements of the patient, but could always be felt in the epigastric region by the examiner's hand. Careful questioning failed to show that the child had been ill previous to her raid on the persimmon tree. Nevertheless, much doubt was entertained as to the nature of the tumor. It was of course possible for this lump to have been present before the persimmons were eaten, but in the absence of any history of previous illness it was reasonable to conclude that it was connected with the ingestion of the fruit.

The patient was kept under observation at the Presbyterian Hospital for four days, during which time her functions were normally performed. The only complaint she made was of pain in her stomach.

The abdomen was opened December 9 under chloroform anesthesia. When the fingers were introduced into the peritoneal sac two large masses could be distinguished, one near the median line and one far to the left side behind the ribs. These two lumps were entirely separate and distinct from each other. Further exploration demonstrated the fact that the masses were in the stomach and closely held by the walls of that viscus. The stomach was now opened and two large balls, one in the fundus and the other near the pyloric extremity, were made out. The incision in the stomach was lengthened to about two and a half inches. An attempt to break up these masses by the finger was unsuccessful, so recourse was had to a pair of curved scissors for this purpose. In this manner a mass of persimmon seeds, shells, twigs, leaves, etc., was removed piecemeal through the incision. The masses while in the stomach were globular, of a very dense black on the surface and of a lighter color in the interior. The entire mass removed weighed nine ounces.

The anterior wall of the stomach was drawn through the abdominal incision during the removal of the detritus and the peritoneal cavity shut off by sponges. The incision in the stomach was closed by interrupted Lembert sutures of silk. The organ and the abdominal wall were carefully cleansed, after which the stomach was dropped back into the abdomen. The abdominal wall was closed tightly with tier sutures. The skin was closed with a subcuticular suture of silkworm gut, which was removed December 21, twelve days after the operation. The patient returned to her home in perfect health Jan. 11, 1902.

The case possesses sufficient interest to merit its being presented at this meeting. The main difficulty lay in the diagnosis, which was only rendered clear after the stomach itself was opened.

DISCUSSION.

Dr. Nathan Jacobson, Syracuse, N. Y.—The question of foreign bodies in the stomach and their removal is one of considerable interest. I reported a case last year in which I had operated on a child eleven years old who had formed the habit of biting off the ends of her hair. She wore the hair long and she had filled her stomach with what she had bitten off. No one had suspected that the tumor which could be felt was even a foreign body. The only manifestation she presented was that at night she was frequently seized with colicky pains. After these had persisted for several hours she would be relieved. The tumor had the shape of the kidney and was as movable as a misplaced kidney. After exposing the stomach a transverse incision was made into it. A hairy mass protruded, which after removal was found to weigh one ounce less than a pound. I have collected upward of twenty cases, one of which was reported as early as 1778 in a French journal. Very few copies of the journal containing this article can be had. An excellent drawing accompanies the article. Singularly enough, in not one of the twenty cases was the diagnosis made beforehand, one half being discovered on the operating table, and the other half postmortem. All of the cases operated on recovered. The tumors that have been found have occasionally been made up of other substances besides hair. One mass weighed over four pounds and had considerably displaced the stomach; so much so that the long diameter of the stomach was vertical. One would imagine that these conditions would only occur in the feeble-minded, but very few of them occurred in the insane. In addition to the cases referred to in my paper a case was reported to the New York State Medical Association some time ago and an additional one has been recently reported by a Canadian surgeon.

New York and London Provision for Infectious Diseases.—London has 6500 beds for the treatment of infectious diseases, or one bed for each thousand population; New York City has only 750 such beds, or one for each 5000. London is adding 1500 beds to its present supply, and New York, through an issue of bonds, authorized this year, is adding 225 beds.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

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CANCER RESEARCH AT THE MIDDLESEX HOSPITAL IN LONDON.

Scientific inquiry into cancer has been started within the last two or three years on substantial basis in our own country, in England and in Germany. Special "leagues" against cancer have been formed in France, Belgium and elsewhere. It appears that in June, 1792, the Middlesex Hospital opened a ward for the reception of patients suffering with cancer, and this cancer ward has remained a distinctive feature of the hospital from that time to the present day—a period of 110 years—during which it has afforded refuge for a vast number of sufferers.

It is pleasant to know that this worthy undertaking owes its inception in large part to a surgeon, Mr. John Howard, who by his excellent advice smoothed the way for the acceptance by the hospital, under proper conditions, of certain funds given by an at that time anonymous benefactor, whose name subsequent to his death was revealed by Howard to be Samuel Whitbread. John Howard, in a letter to "the medical gentlemen of the Middlesex Hospital," in which the ideas underlying the foundation are developed, said that two principal objects were in mind, namely, "the relief of persons suffering under this disease, and the investigation of a complaint which, although extremely common, is, both with regard to its natural history and cure, but imperfectly known." And he recommends that an airy ward be appropriated to this specific disease called cancer, and to this disease only. He quotes Lord Bacon's remark to the effect that medical men should make themselves proficient in physic by studying one disease at a time. From the observation of a large number of patients Howard hoped that new lights would appear, and that new discoveries would be made.

John Howard left but scanty writings behind him, but sufficient to show that he was cultured, liberal and imbued with a true scientific spirit that still bears useful fruit in the results of the, at that time, very unique undertaking of which he may be regarded as the originator. Recently opportunity made it possible to establish modern laboratories for the systematic scientific investigation of cancer in the Middlesex Hospital in order to fulfill better one of the main objects for which the cancer ward was founded. A. G. R. Foulerton is the director of this laboratory, which was opened March 1, 1900, and which has just issued its first volume of reports.[1] The introduction by Sidney Coupland gives an interesting historical account of the cancer charity of the hospital, and it is from its paper that the preceding statements concerning John Howard are extracted. The scientific papers proper deal with the pathogenic action of blastomycetes, the cytology of the blood in malignant disease, the statistics of 500 cases of cancer, and the bacteriological examination of cases of sarcoma and carcinoma. Henry W. P. Young gives a good résumé of the literature on pathogenic blastomycetes and describes his own observations of the actions of previously isolated as well as new yeasts or torulæ. The most important point brought out is confirmatory of the steady growing conviction that these organisms are of no import in the causation of cancer. The lesions they produce in susceptible animals are essentially inflammatory, the main bulk of the new growths often being made up of the parasites themselves. The study of the blood in malignant disease by Cecil Price-Jones appears to show that there are no specific or diagnostic characteristics. So far as it is possible at this time to construct a definite type of the cytology of the blood in malignant tumors, the most prominent feature is a gradual increase in the polymorphonuclear cells with diminution of lymphocytes. In cachectic cases the number of red cells and the hemoglobin are diminished. Poikilocytosis is marked early. Foulerton and Price-Jones conducted a careful bacteriologic examination of a number of sarcomas and carcinomas, but without obtaining anything in the nature of a constant or positive result, the results so far as they go indicating that the parasites of malignant tumors, if parasites they contain, are not visibly cultivable on ordinary media under usual conditions of bacteriologic work.

We may well congratulate the Middlesex Hospital, and more particularly its cancer investigation committee, on the renewed efforts to more fully realize the noble objects of the cancer foundation of the hospital. It may be long before decided practical results are reached from such work as this. We are reminded of John Howard's quotation from Sydenham, who says: "I have often thought that if I knew accurately the natural history of any disease, I should never be at a loss for a proper method of treating it."

LEPROSY IN THE UNITED STATES.

It is only a short time since the Marine-Hospital Service authorities reported that there were 278 lepers in the United States, this presumably being the total number among us, the majority being credited to Louisiana and Minnesota, where the disease has long been known to exist. Dr. A. S. Ashmead[2] disputes these figures and gives details of omissions in his own personal knowledge. Thus, instead of seven cases only in the State of New York he claims to know of sixteen in New York City alone, in Michigan where none were reported he has knowledge of three cases, and more or less similar facts in other states. Oregon did not report 100 lepers who are on record in Japanese immigration statistics as having gone there, and the *New Orleans Picayune* gives 400 as residing in Louisiana, where the government figures allow only 155. Other specialists, he says, have knowledge of additional cases to those known by him, and the majority of leper specialists failed, he alleges, to give the private memoranda of their cases to the government inquirers. From all the facts he deduces that the number of lepers in the country must be much larger than is commonly supposed, and that they constitute a real peril, endangering us with the possibility of a more general spread of the disease among our population. His advocacy of a national leper law is well known, requiring registration and isolation under the control of a special government commission or commissioner, and he offers these facts in support of his plan.

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[1] Reports from the Cancer Research Laboratories: The Middlesex Hospital, London, 1902.

[2] In a communication to the Pacific Medical Journal, September, 1902.

It may be that our statistics of leprosy are very defective; we are very ready to admit that this is the case on the evidence adduced. It is quite possible that there may be several hundred more lepers in the United States than were found by the Marine-Hospital officials and that the number is increasing. There is every probability that cases have always existed among us, possibly even in larger proportion to the general population at some former times than at present. Of course, it has gone undiagnosed, as, according to Dr. Ashmead, it does at present to a considerable extent. Just now with our increased emigration from the Levant and our generally enlarged tropical relations it is not at all surprising if we have a larger number than ever before. The encouraging fact is that there appears to be practically no indigenous leprosy except in Louisiana and possibly one or two other places on our extreme southern border. All the cases reported in our large cities are exotics, and there is little evidence anywhere that they propogate the disease. Of course, with their greater number we have to consider the possibility of contagion, and there may have been exceptional instances of the disease occurring in persons who have never lived or traveled out of the country, but so far these are so rare as to be practically negligible. In Minnesota the introduced disease appears to die out with the changed modes of living and surroundings. So far as the data are obtainable it does not seem warrantable to assume that leprosy is a imminent national peril.

Nevertheless, it is well worth while to neglect no reasonable means of keeping out the disgusting and incurable disorder. Dr. Ashmead makes the wise suggestion that we should include in our treaties with foreign countries a provision requiring them to give to our consuls abroad their record of emigrating lepers and leper relatives as well as to otherwise refrain from unloading on us this undesirable class, as he hints is being systematically done. The time will come when we will have to look more carefully into the immigration problem, and it is well to begin on such obvious abuses as this if it exists. It is a subject well worthy the earnest and early attention of the new Public Health Service reorganized from the Marine-Hospital Service of the past, and there is no reason to think that it will neglect this important matter that comes under its supervision.

DIPHTHERIA AS A COMPLICATION OF SCARLET FEVER.

It is not always an easy matter to distinguish the sore throat of scarlet fever from that of diphtheria, and it is only since the discovery of the diphtheria bacillus that it has become possible to make this differentiation with absolute certainty. The difficulty of the situation is not a little increased by the fact that occasionally the two diseases are associated in the same person. At times, under such circumstances, bacteriologic examination has disclosed the presence of bacilli morphologically, tinctorially and culturally corresponding with diphtheria bacilli, but hitherto their identity has not been unequivocally established by inoculation experiments.

A study along these lines has been undertaken by Dr. J. A. Schabad,[1] who finds as a result of his observations that diphtheria is observed as a complication of scarlet fever, not only during convalescence from the latter disease, but also at its height, and even at its beginning. In order to make a diagnosis of a combination of the two diseases at the beginning of the attack coincidence between the clinical symptoms and the results of bacteriologic examination is necessary; that is, both the clinical symptoms of diphtheria and the diphtheria bacilli must be present. While in cases of diphtheria occurring during convalescence from scarlet fever and in cases developing at the height of the attack the diphtheria bacilli cultivated from the pharynx exhibit normal virulence toward guinea-pigs, they prove little if at all virulent when obtained at the beginning of an attack of scarlet fever, although they exhibit all of the physical characters of true diphtheria bacilli. This want of virulence in diphtheria bacilli obtained at the beginning of an attack of scarlet fever does not preclude their participation in the pathologic process, that is, the combination of scarlet fever and diphtheria.

In addition to cases of combined scarlet fever and diphtheria, diphtheria bacilli may at times be found at the beginning of an attack of scarlet fever, although clinical symptoms of diphtheric angina may not be evident. In view of the milder course and the more favorable termination of such cases, as compared with cases of combined scarlet fever and diphtheria, it appears probable that in these cases the diphtheria bacilli play the part of saprophytes without taking part in the pathologic process. In order to prevent the spread of diphtheria among scarlet fever patients and convalescents in the hospital wards for scarlet fever it is necessary for the new patients with diphtheria bacilli in the pharynx to be isolated from the remainder. In order to effect this end the pharynx should be at once examined bacteriologically in all cases, or at least in all in which membrane is present. All cases of combined scarlet fever and diphtheria, as well as cases in which diphtheria occurs as a complication of scarlet fever at the height of the disease or during convalescence, should be treated with antitoxin.

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[1] Archiv für Kinderheilkunde, 34. B., 3, 4. H., p. 161.

THE HANDICAP OF CLOTHING.

It was a distinguished English novelist who remarked that clothes were a very small matter to a man; he could get along without them if the conventionalities and climate permitted, but they are everything to a woman. This sociologic and psychologic fact apparently has its bearings on the fitness of woman to practice medicine, at least according to British experience. According to a transatlantic contemporary, the British woman who is a physician has been found to be seriously handicapped by the numerous solemn rites she has to go through before she can permit herself to appear in public, and the time thus consumed appears unduly long to those who urgently want her services. This matter has even been the subject of official attention over there, for we read of what was at least an implied censure by a coroner's jury of a board of infirmary guardians for not having a male physician on hand to receive emergency cases. We are more patient and long suffering on this side of the Atlantic or our American women are more expeditious, for such complaints have not so far come to our knowledge. There may be something in the unstimulating atmosphere of the British Isles that causes undue delays in the necessary prinking that a lady must go through even to meet only accident victims and ambulance drivers. Our British lady confrères—or perhaps we should say consoeurs—will, of course, rise to the occasion in some way and be a little more strenuous in toilet expedition.

MEDICAL SOCIALISM.

According to a recent issue of the *Journal de Paris* the physicians in Holland are agitating for a sort of state endowment of the profession. The plan is to add 1 or 2 per cent. to the income tax on all having a yearly income of 500 florins or more, the proceeds of which will be devoted to the support of the state health functionaries, who would thus be freed from all cares of business and be able to devote their whole time to the welfare of their patients and their advancement in professional knowledge. All medical treatment would be free, but only the rich or relatively well to do would have to contribute to the tax. There would be, according to this plan, one physician to each 2,000 of the general population, or about 2,500 in all for the 500,000 inhabitants of the Netherlands. This plan has a specious appearance, but it would be interesting to see how it would work in practice. What would the high-priced specialist do, for it would almost necessarily imply that no state authorized doctors should charge a fee. How would the government manage the interlopers and quacks who would undoubtedly endeavor to continue to exist? How about consultants from without or those foreigners who might desire the services as consultants of Dutch physicians? These and a host of other questions suggest themselves if this interesting experiment in state socialism is to be made. We have, however, some little doubt as to the imminent danger of its being practically realized in the near future.

UNFAIR TESTS.

It is a pity that a good law should ever be enforced in such a way as to do injustice, but that sometimes happens. Apparently a case of this kind is made against the California State Examining Board by the *Pacific Medical Journal.* It criticises especially the questions on pathology, taking exceptions to those asking a definition of cryoscopy and for the characteristic lesions of Hanot's cirrhosis. Neither of these questions is exactly fair as testing a practitioner's qualifications. Cryoscopy is a word not found in quite recent medical literature, and Hanot's cirrhosis is a name only occasionally applied to hypertrophic cirrhosis of the liver. In neither case could it be fairly expected that any but one constantly posted in the most recent periodical literature would be able readily to answer these questions, and any one rejected for failure to do so would justly have a grievance. If, as our contemporary claims, some were rejected for such failure the decision ought to be revised. If, moreover, all failed on these particular questions except a few special students of one school, as our contemporary says was the case, it has a worse appearance. It is unfortunate that the examination is open to this particular criticism, as, from the published questions, in all other respects it seemed to have been eminently fair. Such unfortunate occurrences furnish weapons for those who would abolish state practice acts and go back to the evils that have existed. Our medical examining boards ought to have a specially critical eye on themselves and forestall all such possibilities.

THE ASEPTIC BARBER SHOP.

The dangers of the barber shop, while perhaps not as serious as they might be, are still uncomfortable subjects for reflection, and whatever will insure against them ought to be welcomed by the patronizing public. In Missouri they have a State Board of Examiners for barbers, with authority to make rules for their guidance that shall be imperative. The board has just issued a very elaborate set of regulations for barber shops, which if enforced would rob shaving of its terrors to those initiated into its pathologic possibilities. The shops must be scrubbed with hot water and lye every night; the razors, clippers and scissors dipped in a 10 per cent. solution of formaldehyd after each use and the hands cleansed; brushes and combs, towels, etc., must be sterilized and cleansed before use; sponges and powder puffs are forbidden, and special disinfection is ordered after operating on any person who has a facial or scalp eruption. In short, the Missouri barbers must hereafter be aseptic in every sense or the state board will be after them. There is a suggestion of something of antiquity in thus placing the barbers under a like control to that of the practice of medicine, but the idea is thoroughly in accordance with modern hygienic theories. The barbers may object and some of them require a little disciplinary treatment before the salutary measures prescribed are made effectual in all quarters, but the public will endorse the rules. It is not pleasant to think of the chance of getting whatever it may be that goes under the name of barber's itch, but there are still worse things that might be conveyed. If Missouri enforces her regulations, which is perhaps doubtful, other states will soon be following her example in response to public demand.

THE RADIUM RAYS IN THERAPEUTICS.

In a recent issue of The Journal (September 20) was published an abstract of a communication by Danlos[1] on the effects of radium in the cure of lupus. The results reported are certainly striking enough, and it would appear that we have in this substance a therapeutic agent of considerable promise. Its advantages over the tedious and expensive light treatment when it is practicable are obvious; the radium can be applied directly to the diseased area without inconveniencing the patient or requiring the continuous attention of the operator, and while radium is a rare and expensive substance it would seem probable that the general cost of the treatment can be greatly reduced. A possible inconvenience of the treatment is that the radium application may cause obstinate ulcers, as shown by a case reported by Hallopeau and Gadaud in the same journal, but this can probably be avoided by proper technic and care. It is suggestive, moreover, of the close relationship of the radium radiations and the x-ray, and of a possible like utility in malignant disease. It is probably this same destructive action of the x-rays that is the cause of their effectiveness in cancer; they exercise it more quickly on the imperfect cancer cells than on those of the normal tissues. The advantages of radium for such treatment, if it should be found as effective, are obvious. The local application can be made directly on the spot and in some cases of internal or quasi-internal cancer, such as that of the cervix uteri, it would seem that it might be specially valuable. It is possible, moreover, that combined with surgery, or as an after-treatment, the radium rays may be found equivalent to the x-ray, and probably experiments are already being made in this direction, and before long we shall hear of their results. So far there is no reason to believe that they will not be attended with a fair amount of success, which will be an important addition to our therapeutic resources in a hitherto almost hopeless class of disorders.

Medical News.

CALIFORNIA.

Plague in San Francisco.—Ten cases, all fatal, were reported during August, according to the report of the Public Health and Marine-Hospital Service. Two of these were of the pneumonic variety.

Pacific Hospital Opened.—The Pacific Hospital, Los Angeles, was opened to the public, September 9. It is elaborately equipped and has 75 private rooms for patients, and is exclusively for surgical cases.

August Deaths.—The deaths in San Francisco during August numbered 597, equivalent to an annual death rate of 19.87 per 1000. In August, 1901, there were 478 deaths, a death rate of 15.92 per 1000 per annum. Tuberculosis caused 76 deaths, diseases of brain 43, diseases of heart 65, cancer 34, digestive diseases 28, pneumonia 26, and Bright's disease 21.

Jewish Hospital Opened.—The Kaspare Cohn Hospital, Los Angeles, was dedicated with appropriate ceremonies, September 21. Kaspare Cohn presented the hospital to the Hebrews of Los Angeles. The gift was formally accepted by Rabbi Hecht, and Dr. Philip Newmark, who is to have direct charge of the hospital, made a short address, in which he outlined the plans for the conduct of the institution.

Personal.—Dr. James H. McBride, Pasadena, has been elected dean of the medical department of the University of Southern California, Los Angeles.——Dr. Ida M. Lathrop, San Francisco, has been committed to the Mendocino State Hospital, Ukiah, for treatment.——Dr. F. W. Ross, after an absence of three years in the service of the North American Commercial Company as physician on the island of St. Paul, Bering Sea, Alaska, has returned to San Jose.

ILLINOIS.

Chicago.

St. Luke's Society in More Trouble.—Judgment has been entered against "Dr." O. E. Miller and the St. Luke Society for $1250 unpaid rent.

Personal.—Dr. E. Wyllys Andrews struck his head while diving at a natatorium in Chicago and was severely bruised. The injury necessitated his stay in a hospital for several days. ——Dr. Max A. Weisskoff and wife have returned from their western tour.

Eminent Irish Surgeon in Chicago.—Mr. Charles B. Ball, professor of surgery in Trinity Medical College, Dublin, who recently delivered the Lane lectures at the Cooper Medical College of California, arrived in Chicago, September 25, and was entertained by Drs. John B. Murphy, William A. Evans, and J. Rawson Pennington. In the evening, by invitation, he showed some beautiful colored slides of diseases of the rectum in the rooms of the Chicago Medical Society.

Deaths of the Week.—The 446 deaths reported for the week ended September 27 furnish an unusually low mortality rate for September. On the basis of 1,820,000 population the annual rate is only 12.73 per 1000, while for the corresponding week of the most healthful year on record (1901) the annual rate was 14.41 per 1000, or more than 11 per cent. greater. The increase of diphtheria and scarlet fever cases, however, is fully 40 per cent. over the previous week, and their mortality is nearly 88 per cent. greater than in the corresponding week of last year.

The Typhoid Situation.—There were 25 typhoid deaths reported during the week, this number being 13 fewer than that of the previous week and 22 fewer than the average weekly number since August 1. Reports from the 15 principal hospitals of the city show a decrease in the number of cases under treatment and of new cases admitted, of about 15 per cent. as compared with the previous week. Up to noon, September 27, 646 cases had been admitted to the County Hospital since July 1; of this number 69 died, 313 were discharged recovered. and 264 remained under treatment. The death rate, 18 per cent. of the completed cases, is higher than had been anticipated during the earlier weeks of the epidemic. The Department of Health believes that the highest figures have been reached and that the disease may no longer be regarded as epidemic.

INDIANA.

Medical College Opens.—The Medical College of Indiana, Indianapolis, opened, September 24, with the largest enrolment in its history. Addresses were made by the dean, Dr. Henry Jameson, and by the vice-dean, Dr. Alembert W. Brayton.

Indiana Denies Ames License.—The State Board of Medical Registration and Examination is reported to have refused to grant Dr. Albert A. Ames, late mayor of Minneapolis, a temporary license to practice on the ground that he appears to be a fugitive from justice.

August Morbidity.—Smallpox for the nineteenth consecutive month was the most prevalent disease. Typhoid fever was second in prevalence. All but six of the 92 counties reported typhoid fever present, and the 167 deaths were reported from 65 counties; 245 cases of smallpox were present in 30 counties. In July 502 cases were reported in 46 counties, with 15 deaths.

August Mortality.—The Monthly Bulletin of the State Board of Health reports 3158 deaths, a rate of 14.8 per 1000 per annum. In the same month last year the deaths numbered 2932, a rate of 13.7. Of the total, 23.4 per cent. were under 1 year of age and 22.9 per cent. were 65 and over. Important causes of death were as follows: Tuberculosis 313, typhoid fever 167, diphtheria 20, scarlet fever 7, measles 5, whooping cough 20, pneumonia 69, diarrheal diseases 550, cerebrospinal meningitis 5, influenza 2, cancer 104, violence 129, and smallpox 2.

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[1] Ann. de Dermatologie et de Syphilis, July.

MARYLAND.

True Bill for Manslaughter.—The grand jury of Baltimore County found a true bill against Dr. George Hodges for manslaughter.

Personal.—Dr. G. Pickrell, surgeon U. S. Navy, has been ordered to the Naval Academy, Annapolis, for duty. Dr. James A. Bond, Westminster, has sailed for London, England, where he will take a special course in medicine.——Dr. A. C. Taylor, Ellicott City, will spend the winter in Colorado.

Vaccine Physicians Appointed.—The following have been appointed vaccine physicians of Carroll County: Drs. Charles W. Weaver, David E. Hoff, J. J. Stewart, Samuel L. Moores, S. M. Sprechen, J. H. Sherman, Charles R. Foutz, R. F. Richards, C. H. Diller, Geo. H. Brown, J. H. Watts, Wm. Gaver and E. D. Cronk.

Baltimore.

Hospital Opened.—The Hospital for the Women of Maryland opened for the season September 17.

Deaths and Disease of the Week.—There were 173 deaths last week, 15 being from typhoid fever and 12 from cancer. The Health Department reports 51 new cases of typhoid fever, 19 of diphtheria, 12 of scarlet fever, and 1 of smallpox.

Filtration Plant Discussed.—The question of a filtration plant for the city to get rid of typhoid fever germs was discussed last week by the Municipal Improvement League. The water engineer estimates the cost, with pumping station, purchase of land, conduits and accessories at $2,000,000. The expense of operating the plant would be $2.50 per 1,000,000 gallons.

Colleges Open.—The Woman's Medical College opened October 1 with an address by Dr. Charlotte Murdoch, Instructor in pathology.——The Baltimore Medical College opened September 25 with an address by Prof. J. M. H. Rowland.——The University of Maryland opened October 1.——The College of Physicians and Surgeons opened its thirty-first session, September 30, with an introductory address by Prof. I. R. Trimble, who devoted himself principally to the history of anatomic instruction in the school with sketches of the leading anatomists and surgeons from 1827 to 1902.

Heating Hospitals.—The question of the coal supply for the hospitals is most serious. Inquiry has shown that of 21 hospitals only one, the Marine Hospital, has a good supply, and seven refused to give an estimate of the amount on hand. Three of the largest hospitals are absolutely without any hard coal, and only one of these has a little coke and soft coal on hand. No hard coal is to be obtained, and soft coal and wood are held at high prices. In this emergency the Philadelphia and Reading Railroad offers 1000 tons of hard coal which was stored at Locust Point before the strike and was held for an emergency. It is said that this will be sufficient for all needs and will be sold at moderate prices.

Personal.—Dr. T. Caspar Gilchrist has returned from Europe.——Dr. Henry M. Hurd has returned and resumed his duties as superintendent at the Johns Hopkins Hospital.——Dr. Frederic Taylor, who is connected with the press of this city, has moved to New York.——Dr. D. C. Gilman, president emeritus of Johns Hopkins University and president of Carnegie Institute, returned, September 25, after an absence of several months in Europe.——Dr. Charles M. Ellis of Elkton is convalescing from his late illness at Atlantic City.——Dr. George Walker has returned from Europe.——Dr. Frederick Caruthers has resigned his position as Health Warden as his duties as a member of the faculty of the Maryland Medical College demand all his time.

MICHIGAN.

Medical Colleges Begin Work.—The Grand Rapids Medical College opened for the session of 1902-1903, October 1, with a large increase in attendance.——The seventh annual session of the Saginaw Valley Medical College opened September 22.

Personal.—Dr. and Mrs. Charles E. Tompkins, St. Joseph, started for their new field of labor in Sni-Fu, China, September 16.——Dr. Frederick T. Wright, Calumet, has resigned from the staff of the Calumet and Hecla Hospital and has taken charge of the medical work at the Calumet and Arizona smelters at Douglas, Ariz.

Disease in Michigan.—Reports to the State Board of Health from representative physicians indicate that rheumatism, diarrhea, neuralgia, bronchitis and tonsillitis, in the order named, caused most illness in Michigan during the past week. Meningitis was reported present at four places, whooping cough at 13, measles at 23, diphtheria at 23, smallpox at 26, scarlet fever at 38, typhoid fever at 75, and consumption at 222.

Mortality of Michigan During August.—There were 2466 deaths reported to the Department of State for August. The death rate was 11.8 per 1000 per year, as compared with 11.3 for July, 1902, and 12.2 for August, 1901. There were 585 deaths of infants under 1 year of age; 191 deaths of children from 1 to 4 years, and 630 deaths of persons over 65. Important causes of death were as follows: Tuberculosis, 178; typhoid fever, 45; diphtheria and croup, 33; scarlet fever, 12; measles, 8; whooping cough, 27; pneumonia, 88; diarrheal diseases, under 2 years of age, 325; cancer, 124; accidents and violence, 173. There were 3 deaths from smallpox, and one death was reported from lightning.

NEW YORK.

Buffalo Personals.—Dr. William H. Mansperger has been appointed chief surgeon of the Erie Railroad, with headquarters in Buffalo.——Dr. James Mooney has returned from the eastern coast of Maine and the White Mountains.——Dr. and Mrs. Arthur W. Hurd spent some time recently at Banff Springs in the Canadian Rockies.

The College Year Opens.—Albany Medical College held exercises introductory to its seventy-second annual session, September 3. The president of Union University and Dr. Joseph D. Craig, addressed the new class.——Dr. Lucien Howe delivered the address at the opening of the regular session of the University of Buffalo Medical Department.

Skin Disease at Jamestown.—A skin disease is prevalent in the Jamestown, N. Y., public schools. The eruption of the skin resembles closely a mild form of smallpox, but the patients have no constitutional symptoms. In one school one half the pupils have been attacked by the disease. Great alarm was occasioned by the first cases that were reported, but as the patients are recovering without any ill-effects the impression is becoming general the disease is not of the varioloid type, but psoriasis or a form of tinea.

Hospital Benefactions.—Mrs. Emma F. Taylor, daughter of the late governor, Roswell P. Flower, has notified the president of the board of trustees of the City Hospital, Watertown, that she will defray all the expenses incident to the erection of a new building on the hospital premises for the care of patients suffering with contagious diseases other than smallpox.——Dr. Joseph Brewer of New York, who formerly lived in Cortland, when he died left a bequest of land in South Dakota to the Cortland Hospital. The land has now been sold, and with the proceeds the Hospital Association has been able to pay off its mortgage and has a balance of $700 at interest.

New York City.

Coroner's Physician.—The Supreme Court has decided that Dr. Otto H. Schultze is the rightful successor to the coroner's physician, Dr. Hamilton Williams, who resigned some months ago.

St. Mary's Hospital Staff.—The medical staff of the new hospital in Jamaica, Queen's Borough, which is to be known as St. Mary's Hospital, has organized, with the following officers: President, Dr. Philip M. Wood; vice-president, Dr. George K. Meynen, and secretary, Dr. Austin J. Blanchard; surgical division, Drs. Philip M. Wood, George K. Meynen, Austin J. Blanchard and Timothy J. Flynn; medical division, Drs. Henri M. Augur, Samuel D. Nutt, William T. Scovil and Edwin T. Jones; sanitary department, Dr. Samuel Hendrickson.

New Convalescent Hospital.—While it has not yet been officially announced that a site has been selected for the large hospital for convalescents to be erected through the munificence of John M. Burke, the fact that the trustees have requested the board of aldermen to postpone the opening of certain streets through Mr. Burke's extensive property along the Boston road, Borough of the Bronx, makes it probable that this will be the site of the new institution. There is urgent need for such a charity, and the public takes a personal interest in the expenditure of this fund of four million dollars.

Maniac and Ambulance Surgeon.—Dr. J. A. Link, an ambulance surgeon of Bellevue Hospital, took in an ambulance from a police station the other evening a man who had been found acting strangely in the street. After they had gone a short distance the patient arose and approached the surgeon, saying he wanted to speak to him confidentially. In an instant he had seized Dr. Link by the throat, and then followed a fierce struggle, which necessitated stopping the ambulance and calling in the driver and a passing citizen to the rescue. Dr. Link's clothes were torn, his face and hands cut and there were deep finger marks on his throat.

Typhoid Fever in Brooklyn.—There have been 143 cases of typhoid fever reported this month in the Borough of Brooklyn and 34 deaths, whereas in the same month last year only 72 cases were reported. Dr. Fred L. Jewett, in charge of the bureau of contagious diseases of the health department for that borough, takes the rather remarkable view that this prevalence of typhoid is largely attributable to contamination of the water supply by typhoid germs from old Camp Black, which was an infected spot in 1898. He says that in this region the water supply comes largely from driven wells, and that most of the cases of typhoid at present are in the older wards, or those supplied from water coming from the regular drainage of Long Island.

Sick Immigrants and the City.—Health Commissioner Lederle has notified Commissioner Williams, of the Immigration Bureau, that the city will not continue to care for immigrants suffering from contagious diseases. This step is taken because the city is lacking in accommodation for its own citizens ill with contagious diseases, and the transportation of the immigrants is an additional source of infection. Because of the danger to other patients, it has been necessary to keep all the patients in hospital 15 or 20 days longer than otherwise necessary simply for observation. It is understood that a reasonable time will be given the immigration authorities to provide a hospital for this class of immigrants.

PENNSYLVANIA.

Lancaster General Hospital.—Work has begun on the Lancaster General Hospital. The building is to have 200 feet frontage, will be 3 stories high, and is expected to cost $50,000.

State Hospital Overcrowded.—The Norristown State Hospital for the Insane has 2127 inmates. The institution is so overcrowded that many have to sleep in hallways on mattresses laid on the floor.

Bequests.—Jacob Kritser left a bequest of $5000 to the Presbyterian Hospital for the maintenance of a free bed in the name of his deceased wife.——By the will of James Carlisle more than $4000 is bequeathed to the Presbyterian Hospital.

Personal.—Dr. Ernest La Place, professor of surgery and clinical surgery in the Medico-Chirurgical College and Hospital, recently returned from Europe. While abroad, in recognition of his scientific and medical researches, the French government honored him with a decoration.

University Opening.—On the opening day of the 163d year of the University of Pennsylvania, September 26, announcement was made of the appointment of Dr. Charles H. Frazier as the new dean of the medical department. Dr. Frazier succeeds Dr. John Marshall, who recently resigned.

Changes in Pension Referees.—Dr. Jacob F. Raub, a native of Pennsylvania, who has been for many years chief medical referee of the Pension Office in Washington, has been replaced by Dr. Sam Houston, also a native of Pennsylvania. This is the result of persistent attacks against Dr. Raub by the G. A. R.

Reverend Physician Exonerated.—In the case of the Rev. B. H. Miller, M.D., of Mohnsville, Berks County, who was charged with the illegal practice of medicine, the grand jury, at Reading, after examining twenty witnesses, found that the doctor was practicing under a license, and that there was no ground for prosecution.

TENNESSEE.

Personal.—Dr. Rufus E. Fort, Nashville, has been appointed surgeon-in-chief of the Tennessee Central Railroad, with headquarters in Nashville.

Infirmary for Colored People.—A special infirmary for colored people of Nashville, established by Dr. John T. Wilson, was formally opened September 26.

Tennessee Medical College, Knoxville, opened for its annual session October 1. The only important faculty change is in the anatomic department, where Drs. Walter S. Nash and Albert B. Peck replace Dr. Henry J. Kelso, resigned.

Typhoid Spreading in Nashville.—Typhoid fever is increasing rapidly in Nashville. August shows a record of 67 cases, against 27 for the corresponding period of 1901. Up to the present time last year the record of typhoid fever patients for the city was 72. This year the total number of cases developed has been 167, or more than twice as many.

GENERAL.

The X-Ray for Leprosy.—The success of *x*-ray therapy in certain skin diseases has led to its use in leprosy. The result of the trial in Hawaii will be awaited with much interest.

Disease Not Unusually Prevalent.—Surgeon-General Wyman, in view of the epidemics in various parts of the world, said in a recent interview: "I do not believe that there is more disease this year than usual. The difference is that in these days of rapid transmission of news we hear more of the ills of our distant neighbors than formerly, which makes it appear that the world is in the grasp of pestilence. We now hear almost instantly of an outbreak of a scourge where formerly all would be silence."

Racial Susceptibility to Cholera.—The *Manila American* says of the cholera scourge in the Philippines: "The provinces have suffered much more heavily, considering the proportion of the infected districts only, than has the city of Manila, although there is every reason why the disease should be more severe in a crowded metropolis than in districts less thickly populated. While the fatalities among the Filipinos were above 80 per cent. and among the Americans above 60 per cent., the Chinese have suffered less than 40 per cent. deaths. Perhaps it would be a good thing to study John's mode of life." The per cent. of deaths from all cases has been about 73.5. Between July 10 and August 12 the deaths among soldiers of the Army numbered 35, of which number 6 were natives and 29 Americans.

The report of Surgeon-General W. H. Forwood, of the Army, for the year ending June 30, 1902, contains much interesting data. We note the following:

Disbursed during the year:

Expenses of medical supply depots	$ 493.02
Medical supplies	286,804.37
Medical attendance and medicines	11,240.50
Medical expenses of recruiting	48,875.64
Pay of nurses	3,975.95
Pay of other employes	122,170.48
Washing of hospital linen	40,960.43
Expressage and notary fees	221.50
Total	$514,741.89

Artificial Limbs.—There were furnished during the year, 39 artificial legs, 1 arm and 1 foot. Commutation certificates were issued for 133 cases of amputated leg, 79 of amputated arm, 12 of amputated foot and for 2029 cases of the loss of the use of a limb. These cases involved an expenditure of $116,185.

Trusses.—The number of trusses issued and fitted during the year was 911, at a cost of $7,016.66.

Hospital Construction and Repair.—During the past fiscal year modern hospitals were completed at Fort Robinson, Neb., Fort Mason, Cal., Fort Getty, S. C., and Fort Leavenworth, Kan. The hospital at the latter post was paid for from a special appropriation of $60,000, authorized by Congress, and is equipped with all modern appliances, thus forming a general model for large military posts.

Army Medical Museum.—There were 34,988 specimens in the museum on June 30, 1901; 606 specimens were added during the past fiscal year, but as 78 specimens were discarded, returned to contributors, etc., there remained 35,516 specimens June 30, 1902.

Library of the Surgeon-General's Office.—At the end of the fiscal year the library contained 144,800 volumes and 245,001 medical theses and pamphlets. There were presented to the library during the year 636 books and 9,542 pamphlets and journals.

Medical Officers, United States Army.—The number of medical officers allowed by the act approved Feb. 2, 1901, is 321. The number in service on June 30, 1901, was 272, leaving on that date 49 vacancies to be filled.

Of 192 candidates examined by the Army medical boards, 55 were rejected as disqualified physically, 97 withdrew in the progress of the examination or were rejected on its conclusion, and 40 were approved and recommended for appointment.

Medical Officers, Volunteers.—The act of Feb. 2, 1901, reorganizing the Army, authorized the appointment of 50 surgeons of volunteers with the rank of major and of 150 assistant surgeons of volunteers with the rank of captain, all for service in the Division of the Philippines. On June 30, 1901, the full complement authorized by law was in commission. During the year ended June 30, 1902, 9 majors, surgeons, were discharged from the service, 1 died and 1 was killed in action, making a loss of 11 majors, surgeons, which was repaired by the appointment of 2 majors, surgeons, and the promotion of 9 captains, assistant-surgeons. The loss among the captains, assistant-surgeons, during the year consisted of 22 discharged from service, 1 died and 9 promoted, making a total of 32 replaced by new appointments, leaving in service June 30, 1902, the full complement of 50 majors, surgeons, and 150 captains, assistant-surgeons, allowed by law.

Contract Surgeons, United States Army.—There were in service June 30, 1901, 387 contract surgeons. During the year ended June 30, 1902, contracts were made with 60 physicians, 172 contracts were annulled, and 2 terminated by death, leaving 273 under contract. No contracts are now being made, and a gradual reduction in the number of these surgeons is being effected by natural causes.

Ratio of Men Enlisted to Men Examined.—The total number of men examined for enlistment during the year 1901 was 58,782, of whom 36,721, or 624.70 out of every 1000 examined were accepted.

Health of the Army.—The rates of admission to sick report for disease and injury, the rate of discharge for disability and the mortality rate for the calendar year 1901, all agree in being considerably less than the corresponding rates of the year 1900. This shows the gradual improvement in the condition of the troops, notwithstanding the fact that many of them were subject to the exposures of tropical service in the Division of the Philippines. The character of service in the different parts of the archipelago has varied more during the year than in any similar period since American occupation. Although a great deal of hard field service has been done and much new country occupied, there has been a decrease in sick and mortality rates, for improved conditions in peaceful provinces have more than counterbalanced any local increase caused by arduous field service. Campaigns carried on during the year have not, however, been less trying to the stamina of troops than former ones, rather the reverse, as most of the more accessible points were already occupied by our forces at the beginning of the year and the necessity for following insurgents, hiding in the fastnesses of inaccessible mountains, added much to labors performed in the sweltering heat of the tropics.

Prevalence of Special Diseases.—The following summary is made from the statistics given of the cases, deaths, and the proportion to the total number of men, concerning certain diseases: Scarlet fever: 14 cases, none fatal. Measles: 769 cases, 12 deaths. Mumps: 1382 cases, none fatal. Smallpox: 125 cases, or 1.35 per 1000; 37 cases were fatal. No case of smallpox was reported from either Cuba or Porto Rico. Yellow fever: 14 cases, 1 fatal. All these occurred in Cuba prior to the precautionary measures taken after the discovery made by Major Reed concerning the part played by the mosquito in the propagation of the disease. Typhoid fever: 594 cases, or 6.42 per 1000, and 78 deaths, or .84 per 1000. There was probably more typhoid than this, since 1805 cases of fever, equivalent to 19.52 per 1000, were reported as undetermined. None of these were fatal. Malaria: 35,180 cases, or 430.37 per 1000. Consumption: 452 cases, or 4.89 per 1000, and deaths 1.03 per 1000. Rheumatic fever: 366 cases, or 3.96 per 1000, with 1 death. Intestinal diseases: 28,918 cases, or 312.69 per 1000, and 3.64 deaths. Venereal diseases: 13,911 cases, or 150.41 per 1000, and 8 deaths, or .08 per 1000. There were 161 discharged for disability, or 1.76 per 1000. Alcoholism: 2,018 cases, or 21.82 per 1000, and 26 deaths, or .28 per 1000. Insanity: 166 cases, or 1.76 per 1000. Of these 142, or 1.53 per 1000, were ultimately discharged as insane. Injuries: 17.736 cases, or 191.77 per 1000. Gunshot injuries: 104 men killed, only 46 of them met death in action: 14 deaths were accidental, 33 suicidal and 11 homicidal. Beside those killed, 475 cases of gunshot injury, or 5.14 per 1000, were treated in the hospital. Of these, .53 per 1000 were discharged for disability, and .48 died, leaving 4.13 recoveries per thousand.

CANADA.

Personal.—Dr. W. Russell Thomas, Lennoxville, Que., has gone to Bermuda. He will be the surgeon in charge of the Boer prisoners on their way back to South Africa.

Appointment.—Dr. Edmund M. von Eberts, formerly medical superintendent of the Montreal General Hospital, has been appointed Registrar of the Medical Faculty of McGill University, to succeed Dr. Ruttan, who takes the chair of chemistry.

Less Deaths in Montreal in 1902.—Reports compiled at the City Hall, Montreal, show that there have been so far 700 less deaths in that city than for the corresponding time in 1901. The cause is put down to the cool summer, there being a much lighter infant mortality this summer than for years past.

Annual Meeting of the Executive Health Officers of Ontario.—The annual meeting of this association was held at Berlin, Ont., September 9 and 10, under the presidency of Dr. E. E. Kitchen of St. George. Among other matters discussed were: Control of outbreaks of diphtheria and smallpox, and a special report on the failure of vaccine.

Quebec Dental Association.—The Dental Association of the Province of Quebec has appointed a special committee to confer with the College of Physicians and Surgeons of that province, with a view to dealing with certain physicians who are practicing dentistry without having obtained a license or passing the examinations. The dental association claims that this is illegal and will, if possible, put a stop to it.

New Isolation Buildings at Montreal.—The new isolation buildings in connection with the Royal Victoria Hospital, Montreal, are rapidly nearing completion and will be probably opened in a couple of months. The interior appointments are said to be magnificent. The floors of the different rooms are of tiles, and the walls are finished in marble and specially prepared hardened plaster. In future all cases of contagious diseases of a virulent type will be isolated in this building.

The Quebec Medical Board.—The semi-annual meeting of the Quebec Medical Board was held at Quebec, September 25. A resolution asking the Quebec legislature at its next session to pass the necessary legislation to enable the Federal Government to deal with Dr. Roddick's medical bill was defeated by twenty-one to eleven votes. Dr. Roddick was seen in reference to the defeat of this motion in the Quebec Medical Council, and stated that his course would not be altered thereby. The necessary legislation will be introduced at the coming session of the Quebec legislature.

The Chair of Hygiene at McGill University.—The chair of hygiene in the Faculty of Medicine at McGill University, rendered vacant some months ago through the death of Dr. Wyatt Johnston, will not be filled until a superior man can be found willing to accept it. Some little time ago the position was offered to Dr. Hanken, an eminent English bacteriologist in the employ of the Indian government, but the salary in his present position was doubled, hence a refusal of the offer. The Faculty now has three men in view, any one of whom would be acceptable to them. These are Dr. Balfour of Edinburgh; Dr. Abbott of Philadelphia and Dr. Westbrook of Minneapolis.

Raising the Matriculation Standard in Quebec.—A matter which will be sure to cause no little amount of friction among medical men in the province of Quebec is the action taken at the semi-annual meeting of the Quebec Medical Council with respect to the literary examination necessary for admission to the study of medicine. Hereafter, all students wishing to enter medicine with a view to secure a license to practice in the province of Quebec will be obliged first to pass the literary examination prescribed by the board. The board has decided that all students of medicine must previously have taken the "Cours Classique Complet," which is said to bar English students, it being the regular course of study in the French colleges. The physicians representing the minority on the board will meet in the near future. It is claimed by some that the action of the board is to prevent McGill from continuing the plan of six years' study.

FOREIGN.

Women in Official Medical Positions.—Mme. A. Vassiliades has been appointed physician to the prison for women at Athens, the first woman to receive an official post in Greece. The new professor of anatomy at Milan is also a woman, Rina Martio.

Cholera Threatens Mecca Pilgrimage.—The extent and fatality of the cholera epidemic in Egypt leads the *Cologne Gazette* to urge an international conference of the powers to suppress the pilgrimage to Mecca, which is such a potent disseminator of the disease.

Virchow's Successor.—Johannes Orth, professor of pathologic anatomy in the University of Goettingen, succeeds the late Professor Virchow to the chair of pathologic anatomy in the University of Berlin. Professor Orth was for many years Professor Virchow's assistant.

The Percentage of Physicians in Europe.—A recent number of the *Ztft. f. Social-Wissenschaft* contains an article by Prizing which states that the proportion of medical men to every 1000 inhabitants is in Germany, 5.1; in Austria, 4.1; in Hungary, 2.8; in Italy, 6.3; in Switzerland, 6.1; in France, 3.9; in Spain, 7.1; in Belgium, 5.2; in England, 6.1; in Scotland, 7.7; in Ireland, 5.6; in Denmark, 6.4; in Norway, 5.3; in Sweden, 2.7, and in Russia, 2.7; in Vienna, 13; Berlin, 1.41; Budapest, 1.64; Paris, 0.97; Brussels, 1.47; London, 1.28, and Madrid, 2.44.

Scarlet Fever Serum Successful.—At the seventy-fourth annual Congress of German Physicians and Naturalists at Carlsbad, September 21 to 28, Dr. Moser, the assistant physician at St. Anne's Hospital for Children at Vienna, reported great success with the new scarlet fever serum. During the last two years he has tried it on 400 patients. The mortality was decreased to 8 or 9 per cent. The rate at the other hospitals was double this. The congress has been informed that the government will vote a considerable sum of money in order that the serum may be made in large quantities and distributed to all the children's hospitals in Vienna.

The New Serum Institute at Copenhagen.—The official institute for the production of serums has just been dedicated at Copenhagen with much ceremony. The laboratory for medical bacteriology, as the mother institution, issued a fine Festschrift of 300 pages on the occasion, which contains among other articles a work on the chemical relations in hemolysis, from the pen of Professor Arrhenius and Madsen. Among the scientists present at the ceremonies were Münter from Buffalo, Retzius and Selander from Sweden, Hansen and Holst from Norway, Heymanns from Belgium, and several from England. The institute has fine arrangements for the horses, goats, guinea-pigs, etc., and is even provided with a pond for frogs. Titles were conferred by the Danish government on Salomonsen, director of the institute, and on Madsen.

Virchow's Funeral.—A partial list of the telegrams of condolence received by Virchow's family reads like a catalog of the learned societies of the entire world, besides the innumerable telegrams from private individuals. The city of Berlin took charge of the funeral, which gathered distinguished men from every quarter of Europe. The floral tributes almost overwhelmed the city hall, where the services were held. Conspicuous among them was the wreath more than six feet in diameter, offered by the city. The principal addresses were by Professor Waldeyer and the chief magistrate and mayor of the city. The latter mentioned that Virchow had been a member of the municipal council of Berlin since 1859, and had always taken part systematically in its regular proceedings. He took an interest not only in matters affecting the general welfare, but there was scarcely a single branch of the administration of city affairs in which his influence was not felt, stimulating, encouraging and actively aiding. He helped lay the foundations for the lowest grades of the public school system as well as the highest. He was an active mover in the creating of the system of municipal meat inspection, municipal disinfecting plants and free baths. He also aided in planning and organizing the public hospitals, asylums and sanatoriums. The great sewerage system of Berlin was suggested by him and he helped to realize and consummate it. All these long and comprehensive labors were inspired by his strict sense of duty, his perseverance in the accomplishment of great tasks, and his longing to apply the achievements of scientific research for the benefit of all. In his work in city matters he never wished to command, to insist on his own way, but to instruct and convince, and thus be of service. Entirely apart from his scientific fame, Virchow is a pattern for all men as a model citizen, tireless in his efforts for the welfare of all. Many tributes were paid to the wife with whom he had had fifty-three years of happy wedded life, who had ensured him peace and tranquillity, and surrounded with home comforts. It was stated in one of the addresses that Virchow had been occupied with some scientific task till 5 a. m. on the day of his accident. His work in parliament was extolled in equally appreciative terms. He had never sought popularity, but every child knows his name, and it is an inspiration for even the day laborer, as a power, the incarnation of a principle. One of his daughters is the wife of Professor Henning of Strassburg, and the other of Professor Rabl of Prague. Dr. Hans Virchow is his son, and Dr. Paul Ruge his nephew. His wife is the daughter of the late gynecologist, Karl Mayer.

LONDON LETTER.

Outbreak of Food Poisoning at Derby.

A serious outbreak of food poisoning has occurred in the town and neighborhood of Derby and probably affected considerably more than 150 persons. In the borough of Derby 30 families, including about 100 persons, were attacked. Fifteen members of the household were affected; 11 of another. All those who suffered had partaken of pork pie and other food obtained from a particular pork butcher in the town who deservedly holds a high reputation in his business. In no case was any complaint made as to the general condition of the food by those who consumed it. Simultaneously with the cases in Derby and district other cases were recorded in London and Cheltenham in persons who ate pork pie brought from Derby. Professor Delépine of Owens College, Manchester, has presented a preliminary report on the result of a bacteriological examination. He has isolated a bacillus belonging to the colon group, but is not as yet in a position to name it more accurately. The evidence as to the relation of this bacillus to the epidemic is absolutely clear; the bacillus has been isolated not only from the pork pies, but also from the blood, spleen and intestines of a fatal case, and from the blood, spleen, bile and intestine of several animals which died in two or three days from the effects of feeding on the pies. The bacilli obtained from all these sources are identical. Animals inoculated with this bacillus have died, and in their blood the same bacillus has been found. Four specimens of blood obtained from patients who were ill after eating pork pie have given with the bacillus a clear serum reaction, while no similar reaction with the bacillus was given by the blood of normal persons or of a patient affected with typhoid fever. The bacillus, Professor Delépine concludes, must have contaminated some article entering into the composition of the pie, probably the meat or the jelly, while these were exposed to chances of external contamination. He considers it most probable that the jelly, which is poured into the pie after it has been baked, and which can be melted without much heat, was the article thus contaminated. On microscopic examination the jelly was found full of colonies of bacteria, the large majority of which were produced by the same bacillus as was found in the blood of experimental animals; this bacillus, which is one of those frequently associated with fecal contamination, might have been conveyed by dust from some distance. The bacillus grew at ordinary room temperature, multiplied with extraordinary rapidity, and rendered broth turbid within two hours.

The Gambia Medical Expedition.

The eighth expedition of the Liverpool School of Tropical Medicine, under Dr. J. F. Dutton and Dr. J. L. Todd, started for the Gambia and French Senegal on August 23 last. The French government having been invited to attach a scientist to the expedition, M. Doumergue, the minister of the colonies, has written to say he would have been glad to accept the invitation, but that his department has arranged to send to the French West African possessions special doctors for the purpose of studying the different tropical diseases there. These doctors will be pleased, if occasion offers, to associate themselves with the Liverpool School of Tropical Medicine in its work.

The Indian Census. Effect on the Population of the Great Famine.

The total population of British India, according to a statistical abstract issued by the India Office, is 294,360,356. This is an increase of 7,130,925 on the census of 1891. The increase is only to be found in British territory, for in the native states there is a decline of 3,585,938. This is due to the plague and famine. For instance, in Baroda the population last year was 944,058, whereas in 1891 it was 2,415,369. Equally startling are the figures in the Majputana agency, namely, 4,619,055, as against 12,016,102, and in the Bombay States, 6,908,648, against 8,059,298. Indeed, the difference per cent. in the native states between the two periods shows a decline of 5.43, the population of 1891 being 66,047,487, while in 1901 it is recorded as 62,461,549. In British territory the increase is 4.85 per cent. The largest towns are Calcutta, with a population of 1,026,987; Bombay, 776,006 (a decline of 48,758 on the register of 1891, due mainly to plague); and Madras, 509,346. The expenditure last year on famine relief was $20,060,000, an amount nearly double that spent in 1899-1900, when of course the suffering was not so great. In 1897-8, the period of the previous memorable outbreak, $15,-275,000 was spent in relief. The number of persons killed in 1900 by tigers was 943, and those bitten by snakes was 22,391, but the latter figure can not be relied on, for the reason that relatives frequently poison an undesirable member of the family and register the death as due to "snake-bite." The number of wild beasts destroyed was 17,250, and the slayers received "rewards" amounting to 104,097 rupees. No fewer than 87,910 snakes were killed, the financial recognition totaling 3218 rupees. In this case, also, however, the rewards were found to give rise to a flourishing and profitable industry in snake-rearing.

Lunacy in England and Wales.

The fifty-sixth report of the Commissioners in Lunacy has been issued as a blue-book. From this it appears that, according to the statutory returns, the total number of notified lunatics in England and Wales, on January 1, 1902, was 110,713, being 2769 more than on the same day in 1901. This increase compares with an increase of 1333 in 1900, one of 1525 in 1899, and one of 3114 in 1898. The average annual increase in the ten years ending Dec. 31, 1901, was 2286, and in the five years ending the same day 2270. The increase in 1901, therefore, exceeded the average annual increase in the preceding five years by 500.

Correspondence.

The Canonization of a Divine Healer in Russia.

Denver, Colo., Sept. 22, 1902.

To the Editor:—The divine healers, Christian scientists et al in the United States and elsewhere should hurry up and go to Russia for instructions in their art of divination, for it is in orthodox Russia that things are carried to their extreme limit of what sane people call absurdity, but which to the minds of the befogged should mean, logical conclusions. There, in mother Russia, once a divine healer is a healer forever; he performs the same functions after his death as when alive, a feat not yet attained by the crack-brained in the United

States. The following proclamation, published in the government organ *Pravitelstvenni Vyestnik*, reads like a document of the middle ages:

> The memory of the holy Seraphim of the Saratov desert, who was gathered unto his fathers, Jan. 2, 1883, is kept in deep veneration by the orthodox Russian people. To the place of his great deeds and eternal rest, unceasingly and in great numbers, from all parts of Russia, pilgrims flock, supplicating for his intercession and his prayers before the Lord, and according to their faith, are either restored to health or receive miraculous aid in their daily tribulations. More than one hundred cases of such gracious deeds of succor obtained through the invocations directed to the aged Seraphim have been entered upon the record kept for this purpose at the instance of the Holy Synod, at the Saratov Monastery, since 1885. The popular faith in the saintliness of the aged Seraphim and in his intercession before God for those who humbly offer to him their homage *is also shared by the* Crown-Wearing Leader of the Russian People, the Virtuous Lord Emperor Nikolai Alexandrovitch.
>
> Now, on this the birthday of Seraphim, July the 19th, 1902, His Majesty has graciously remembered him—the prayerful deeds of the deceased as well as the universal adoration of his memory, and has expressed His will that the canonization of the holy man, the preparations for which had already begun in the Holy Synod, may be forthwith completed.

The thousands of Russian physicians who had read this "gracious" remembrance of the "virtuous" Czar must have felt greatly humiliated at their powerlessness to protest against this absurd, degrading and pagan act of their government, for woe to him who was caught even laughing in his sleeve at the reading of this document.

Woe to the country whose king rules by divine grace, and whose subjects worship divine healers.

C. D. Spivak, M.D.

Excursion to International Medical Congress.

St. Joseph, Mo., Sept. 23, 1902.

To the Editor:—I have just made arrangements for conducting a party to Madrid to the International Medical Congress at the expense of $265.00 minimum. The trip can be made in a little over four weeks. This amount will cover all expenses, including first-class ocean passage each way, first-class railway travel, hotel accommodations for fourteen days in Spain, all transfers of baggage, several days sight seeing in Madrid, all fees for hotel service, etc., including the services of a first-class conductor and interpreter. Side trips, of course, can be taken, and the stay extended indefinitely by those who wish to remain longer in foreign countries. The trip will be a most enjoyable one at that season of the year, going and coming via Gibraltar. If you will kindly call attention to this matter in your columns, I shall be under many obligations, stating that a program giving details of the trip will be mailed upon application to me. Chas. Wood Fassett.

State Boards of Registration.

Connecticut Examination.—Dr. C. A. Lindsley, secretary of the Connecticut State Board of Health, has kindly given us the following information concerning the recent examinations in that state. The committee of the Connecticut Medical Society on March 11 and July 8 examined at New Haven 51 applicants, of whom 43 passed and 8 failed. There were 80 written questions on 8 subjects and 75 per cent. was required. A summary by colleges follows. We are unable to give the percentages.

College.	Total Examined.	Passed.	Failed.
Yale Medical Department	11	11	.
College of Physicians and Surgeons, N. Y.	7	7	.
Bellevue Medical College, New York	2	2	.
New York University	1	1	.
Long Island Medical College	2	1	1
Syracuse University	1	1	.
University of Vermont	3	3	.
Harvard University	1	1	.
Cornell University	1	1	.
Jefferson Medical College	3	3	.
University of Pennsylvania	2	2	.
Woman's, Pennsylvania	2	2	.
Johns Hopkins University	2	2	.
Baltimore Medical College	3	1	2
Medico-Chirurgical, Pennsylvania	2	1	1
Tufts Medical College	1	1	.
Medical College of Alabama	1	.	1
University of the South	1	.	1
Physicians and Surgeons of Atlanta	1	1	.
University of Minnesota	1	1	.
McGill University	1	1	.
Trinity, Toronto	1	.	1
Starling Medical College	1	.	1

The committee of the Connecticut Homeopathic Medical Society has examined 5 by written examination on 8 subjects with the following results (the college of one candidate is not known):

College.	Total Examined.	Passed.	Failed.
Hahnemann College, Philadelphia	2	2	.
New York Homeopathic College	1	1	.
Boston University School of Medicine	1	.	1

The Eclectic Medical Society has held no examination this year, there being no applicants.

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PROFESSIONAL ETIQUETTE.

Faribault, Minn., Sept. 29, 1902.

To the Editor:—I am a subscriber of The Journal and as such, as well as to settle a mooted question, I take the liberty of asking you a question in ethics. A physician decides to locate in a town; what is his duty after arriving at his place of destination, to wait for the physicians already located there to call on him first, or to call on them first? D. M. C.

Ans.—It is the duty of a physician locating in a place to call on all physicians already practicing there whose friendship and professional fellowship he desires.—Ed.

Marriages.

Francis J. Durocher, M.D., to Miss Bella Montie, both of Ecorse, Mich.

Harry D. F. Browning, M.D., to Miss Eda Kracke, both of Moline, Ill., September 17.

Edward A. Montenyohl, M.D., to Miss Clara A. Gall, both of Akron, Ohio, September 18.

Calvin Weidner, M.D., to Miss Edith May Foulds, both of Manchester, Conn., October 1.

Dennis J. McCabe, M.D., to Miss Elizabeth Lavertu, both of Berlin, N. H., September 17.

Timothy M. Lippitt, M.D., to Miss Edith Edmonds, both of Columbus, Ohio, September 18.

Albertus J. Burge, M.D., to Miss Adelaide Lasket, both of Iowa City, Iowa, September 11.

William P. Schwartz, M.D., to Miss Annie Zottmann, both of Louisville, Ky., September 17.

William F. Morris, M.D., to Miss Ercel Arburn, both of Fort Branch, Ind., September 16.

George H. Fox, M.D., to Miss Emilia Sophia Karthaus, both of Philadelphia, September 19.

Alois B. Graham, M.D., Indianapolis, to Miss Aimee Bindley of Terre Haute, Ind., September 24.

Micheal Casper, M.D., Louisville, Ky., to Miss Clara Louise Dwyer at Cannelton, Ind., September 17.

Charles A. De Voe, M.D., Rosendale, Wis., to Miss Nina Walker, ot Postville, Iowa, September 16.

George M. Milner, Goethite, Ala., to Miss Elizabeth Pearl Dickey of Birmingham, Ala., September 17.

Thomas James, Jr., M.D., to Miss Katherine Whiting McClure, both of Louisville, Ky., September 17.

Charles J. Downey, M.D., Springfield, Mass., to Miss Mary Estella Cormick of Lee, Mass., September 17.

Bernard F. Bettelheim, M.D., Alliance, Neb., to Miss Florence Keats of Spearfish, S.D., September 16.

Samuel M. Lougeay, M.D., to Miss Carrie Burgard, both of Fayetteville, Ill., at Nashville, Ill., September 16.

John Walter Shafer, M.D., Morocco, Ind., to Miss Olive May Rippeteau of Jamestown, Ind., September 10.

Capt. William Eugene Vose, assistant surgeon, U. S. Army, to Miss Irene Viola Shrields of Highland Park, Ill., October 2.

Deaths.

Alphonso L. Cory, M.D. Rush Medical College, Chicago, 1892, an esteemed practitioner of Chicago, resident surgeon of the Lake Shore & Michigan Southern Railway, a member of the American Medical Association, Chicago Medical Society, Medico-Legal Society and Physicians' Club, and for several years chief of the attending staff of the Englewood Union Hospital, died at his residence in Chicago, September 25, from pneumonia, after an illness of one week, aged 51.

Charles H. Johnson, M.D. New York University, 1880, a well-known physician of Brooklyn, N. Y., and a member of the Kings County Medical Society, Associated Physicians of Long Island, Brooklyn Pathological Society and the Physicians' Mutual Aid Society, died at his home, September 18, from chronic neuritis and cerebral anemia, after an illness of one year, aged 48.

Edmund K. Perrine, M.D. Jefferson Medical College, Philadelphia, 1886, M.R.C.S. Eng., 1891, a well-known ophthalmologist of Philadelphia, a member of the Philadelphia County Medical Society and of the American Medical Association, died at his residence in Philadelphia, September 18, aged 40.

Walker Curry, M.D. University of Pennsylvania, Philadelphia, 1857, a prominent physician of New York City, who served during the Civil war as a surgeon in the Confederate service, died from pleurisy while visiting friends in Branford, Conn., September 20, aged 60.

Charles W. Williams, M.D. Kentucky School of Medicine, Louisville, 1880, a member of the Otero County Medical Society, Colorado State Medical Society and of the American Medical Association, died recently from brain fever at his home in Manzanola, Colo.

A. M. Burns, M.D. Missouri Medical College, St. Louis, 1878, a retired physician who had been out of health for a long time, and was despondent, was found dead in bed at his home in Huntington, Ind., September 18. It is supposed that he killed himself.

John H. Justice, M.D. Medical College of Indiana, Indianapolis, 1882, a member of the Hancock County Medical Society and of the American Medical Association, died at his home in Greenfield, Ind., September 16, from meningitis, after a short illness, aged 48.

Jesse H. Peek, M.D. University of Virginia, Charlottesville, 1875, a member of the examining board of the Hampton National Soldiers' Home, died at his home in Hampton, Va., September 20, from Bright's disease, complicated with pneumonia, aged 47.

Thomas B. Jones, M.D. Medical College of Ohio, Cincinnati, 1870, died recently at his home in Lynnville, Ind. The Warrick County Medical Society, at its meeting in Boonville, September 9, passed resolutions expressive of sorrow and sympathy.

George F. Hunter, M.D. University of Buffalo, N. Y., 1881, formerly of Michigan, who went to California four years ago on account of lung disease, died in Columbia, Cal., from a self-inflicted gunshot wound of the head, September 11, aged 48.

Arthur S. Bridwell, M.D. Southern Medical College, Atlanta, Ga., 1889, first ward city physician of Atlanta, Ga., died at Grady Hospital in that city, September 14, from jaundice, after an illness of four weeks, aged 38.

Silas F. Gifford, M.D. Castleton (Vt.) Medical College, 1852, one of the oldest and most respected physicians of Norfolk County, Mass., died at his home in Avon, September 18, after an illness of three weeks, aged 78.

Thomas B. Wright, M.D. Jefferson Medical College, Philadelphia, 1885, health officer of Bowling Green, Ky., died at his home in that place from peritonitis, September 18, after an illness of eight weeks, aged 40.

Rufus L. McElroy, M.D. Missouri Medical College, St. Louis, 1896, a promising young physician of Salt Lake City, died at Portland, Ore., from heart disease, September 21, after an illness of two months.

Henry A. Armstrong, M.D. Bellevue Hospital Medical College, New York, 1886, who was obliged to leave Akron, Ohio, on account of his health, died at Pueblo, Colo., after a long illness, September 19.

Harry A. Bell, M.D. University of Pennsylvania, 1897, oldest son of the late Dr. Samuel F. Bell, of Butler, Pa., died at Tucson, Ariz., where he had gone for his health, September 21, aged 28.

Miscellany.

Health and Character of Drummers.—It is stated in the press cable dispatches that the Austrian Ministry of Commerce has recently published the provisions of a new law requiring all commercial travelers to furnish certificates of character and medical certificates that they are not afflicted with any infectious disease or "physical marks of a repulsive character." On presentation of such documents dating back not over a fortnight a license is given, but only for one year. It is evident that the paternal Austrian government intends to look after the welfare of its subjects and not suffer them to become the victims of commercialism through depravation by drummers. It indicates, however, a state of affairs that we hope does not exist elsewhere, and we had not understood that the Austrian communities were such virgin soil that they could be considered in serious peril from any such source.

Insane Complications.—The Baltimore man who, a year ago, kicked his mother-in-law to death, was adjudged insane, and committed to the Maryland Asylum for the Insane. He recently took advantage of the liberty allowed the patients and escaped to Virginia. The authorities of that state now refuse to allow him to be brought back, and the matter will have to be decided in the courts. For just such cases the secretary of the lunacy commission, Dr. Geo. J. Preston, has for several years urged provision should be made. He again urges that a separate building should be constructed at one of the state institutions, accommodating 50 to 75 persons, where the criminal insane may be isolated and kept under strict surveillance. The class of criminal insane—insane at the time of the commission of the act or becoming so afterward—is steadily increasing, and they should be as safely guarded if they were in our penal institutions. It is placing an unnecessary indignity on the insane to place criminals in the same wards with them. The appropriation required is a very modest one. It is said that whatever the decision of the Virginia judge the case will be appealed to the Court of Appeals of Virginia. The case has no parallel in the decisions of the state, and as far as known none in the entire country.

Societies.

COMING MEETINGS.

Medical Association of District of Columbia, Washington, Oct. 7, 1902.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Birmingham, Ala., Oct. 7-9, 1902.

Idaho State Medical Society, Moscow, Oct. 9-10, 1902.

Vermont State Medical Society, Burlington, Oct. 9-10, 1902.

Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

Conference State and Provincial Boards of Health of North America, New Haven, Conn., Oct. 28-29, 1902.

Selma (Ala.) Medical Society.—The physicians of Selma met, September 20, and organized this society with Dr. John P. Furniss, president; Dr. Edwin B. Ward, vice-president, and Dr. Barney B. Rogan, secretary.

Centralia (Ill.) Medical Society.—At the annual meeting of this society Dr. Charles N. Dunn was elected president; Dr. Emanuel Broomer, vice-president; Dr. Edgar E. Fyke, secretary, and Dr. Otto D. Diehl, treasurer.

Bristol North District (Mass.) Medical Society.—The semi-annual meeting of this society was held at Bristol, September 18. Dr. Joshua C. Hubbard, Boston, read a paper on "Deciduoma Malignum, with Report of a Case."

Branch County (Mich.) Medical Society.—This society was organized last week at Coldwater, with Dr. Henry W. Whitmore, Quincy, president; Dr. J. H. Anderson, Union City, secretary, and Dr. Stephen H. Clizbe, Coldwater, treasurer.

Millers River (Mass.) Medical Association.—This association met at Athol, and re-organized with the following officers: Dr. A. V. Bowker, Athol, president; Dr. Francis E. Johnson, Erving, vice-president, and Dr. G. L. Perry, Athol, secretary and treasurer.

Huron County (Mich.) Medical Society.—On September 17 the physicians of Huron County met and organized this society with Dr. Anthony M. Oldfield, Harbor Beach, president; Dr. Willet J. Herrington, Bad Axe, vice-president, and Dr. D. J. McColl, Elkton, secretary and treasurer.

Stearns and Benton County (Minn.) Medical Society.—This society has been organized at St. Cloud, with Dr. Pierre A. Hilbert, Melrose, president; Dr. Warren L. Beebe, St. Cloud, vice-president; Dr. John C. Boehm, St. Cloud, secretary, and Dr. G. Arthur Chilgren, Sauk Rapids, treasurer.

St. Louis Medical Society of Missouri.—After the address of Dr. William Osler, Baltimore, on "William Beaumont, America's First Great Physiologist," before the society, October 4, a reception will be given, followed by a banquet limited to the members of the society, at the West End Hotel.

Stark County (Ohio) Medical Society.—The Stark County Academy of Medicine held its last meeting, September 11, at Massillon. At this time a new constitution and by-laws were adopted in conformity with those of the Ohio State Medical Society and of the American Medical Association.

Washington County (Vt.) Medical Society.—The annual meeting of this society was held in Barre, September 9. Dr. Arthur B. Bisbee, Montpelier, was elected president; Dr. Myron L. Chandler, Barre, vice-president; Dr. Orlando G. Stickney, Barre, secretary, and Dr. Charles E. Chandler, Montpelier, treasurer.

Greene County (Ill.) Medical Society.—The annual election of officers was held at Carrollton, September 20, and resulted as follows: President, Dr. James T. Crow, Carrollton; vice-presidents, Drs. Henry W. Hand, White Hall, and John W. Adams, Walkerville, and secretary and treasurer, Dr. Henry A. Chapin, White Hall.

Whiteside County (Ill.) Medical Association.—The permanent organization was effected at the meeting held in Sterling, September 11. The following officers were elected: President, Dr. Arthur E. McBride, Sterling; vice-president, Dr. James A. Nowlen, Morrison; secretary, Dr. Perry F. Perdue, Lyndon, and treasurer, Dr. John F. Keefer, Sterling.

St. Francis (Quebec) Medical Association.—This organization elected officers at its meeting at Magog, September 10, with the following results: President, Dr. William D. Smith, Sherbrooke; vice-presidents, Drs. J. Oct, Goyette, and George A. Bowen, Magog; secretary, Dr. F. A. Gadbois, Sherbrooke, and assistant secretary, Dr. Aylwin F. Foss, Lennoxville.

Association of Pennsylvania Railroad Surgeons.—This body held its twenty-first annual meeting at Pittsburg, September 12. Dr. Stewart L. McCurdy, Pittsburg, was elected president; Dr. G. W. Thompson, Winamac, Ind., vice-president, and Dr. Richard J. Morgan, Van Wert, Ohio, secretary and treasurer. The next meeting will be held in Fort Wayne, Ind., in September, 1903.

Montcalm County (Mich.) Medical Society.—The physicians of Montcalm County met at Stanton and organized this society with the following officers: Dr. John Avery, Greenville, president; Drs. Norman E. Bachman, Stanton, Francis R. Blanchard, Lake View; George A. Stanton, Belding, and Lyman S. Crotser, Edmore, vice-presidents, and Dr. Horace L. Bower, Greenville, secretary and treasurer.

Craighead County (Ark.) Medical Society.—This society met at Jonesboro, September 2, for the purpose of re-organizing on the lines recommended by the American Medical Association. Dr. Ben. L. Harrison, Jonesboro, was elected president; Dr. Robert A. Simpson, Bay, vice-president; Dr. Joseph T. Baker, Jonesboro, secretary; Dr. C. T. Cannaday, Brookland, treasurer, and Dr. W. C. Halton, librarian.

Medical Society of the Missouri Valley.—This society held its fifteenth annual meeting at Sioux City, September 18. The following officers were elected: Dr. James M. Barstow, Council Bluffs, Iowa, president; Drs. Mary Strong, Omaha, Neb., and Robert E. Conniff, Sioux City, Iowa, vice-presidents, and Dr. Wood, Sioux City, Iowa, secretary. Dr. Donald Macrae, Council Bluffs, Iowa, was re-elected treasurer.

International Congress of Hygiene and Demography.—The ninth congress will be held at Brussels, Belgium, September 2 to 8, 1903. All communications must be received before May, 1903, will be printed in the author's language, with a summary in French at the close, and distributed to the members before the congress convenes. There are to be seven sections, including one on colonial hygiene. The Belgian government is taking an active interest in the propaganda of this congress.

Arkansas Medical Society.—This society, which adjourned to meet at Jonesboro, May 12 to 14, 1903, has changed the date on account of the meeting of the American Medical Association in New Orleans, May 5 to 8, to be from April 30 to May 2. The president of the society has issued a call for the first meeting of the councilors of the society at Little Rock, October 20, to devise ways and means of perfecting the reorganization of the society through the county societies in conformity with the new constitution adopted at the recent meeting in Little Rock.

Medical Association of the State of Tennessee.—In accordance with a resolution adopted at Memphis by the State Medical Association a charter for its incorporation has been applied for. The incorporators are: Drs. S. R. Millis, D. E. Nelson, W. K. Vance, T. K. Powell, T. J. Happel, G. C. Savage, W. D. Haggard and Deering J. Roberts. The purpose of the incorporation as recited by the charter is for the advancement of medical knowledge, elevation of professional interests of the members of the association, the extension of the bounds of medical science and promotion of all means adapted to relieve suffering, improve health and save life.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Fourteenth Annual Meeting, held in Washington, D. C., Sept. 16-18, 1902.

The President, Dr. Edwin Ricketts, Cincinnati, in the Chair.

(*Continued from page 791.*)

Ruptured Pus Tubes.

Dr. Charles Greene Cumston, Boston, said there were two methods of dealing with pus tubes, one of which was posterior colpotomy, followed by incision and drainage of the sac, while the second was to remove the tube, and if the condition was bilateral to do a total hysterectomy. Naturally, the easiest and least dangerous method was drainage of the perforated pyosalpinx through the vagina. The proper treatment, however, for perforated pus tubes, was abdominal incision, whether perforation had taken place in the general peritoneal cavity or into the intestine, bladder or vagina. He did not favor vaginal hysterectomy in cases of perforated pus tubes, although he believed that when the sac had burst into the bladder the vaginal route might be indicated under certain circumstances.

The Importance of an Apprenticeship in Operative Gynecology.

Dr. Gurney Williams, Philadelphia, read a paper with this title, in which he said that the modern apprenticeship differed materially from that of a quarter of a century or more ago, when the specialty was being developed by men with large and varied professional and surgical experience. Again, the nature of the work in those days differed greatly from the modern. Hospitals, now so common in every state and city, were not giving their resident physicians the practical education or using the vast amount of material at their command for that purpose. He spoke from experience in this matter, for, after serving in two large hospitals thirty-six months, it was necessary for him to go elsewhere for practical instruction and the apprenticeship desired. All hospitals, he contended, should be practical schools for the residents and the visiting medical and surgical staffs.

The Irrational Starvation Treatment of Appendicitis.

Dr. John B. Deaver, Philadelphia, said his experience of 98 cases for the past two and a half months had furnished a lesson from which objections to the rest or starvation treatment were drawn. The particulars of these cases were detailed. The lessons drawn were that an early operation, preferably in the stage of appendiceal colic, was the only rational procedure, and was the only treatment which would reduce the mortality in acute appendicitis to insignificant figures; that the so-called rest treatment of appendicitis failed to check peritoneal inflammation, and would, in the majority of cases, harm the patient. The statistics presented in the paper bore out the above statements to the letter. He was willing to grant that operation in the presence of an acutely inflamed general peritonitis was attended by great risk to life, and therefore it was often wise to defer operation in the hope that the inflammatory process would become localized. This was often his practice; but he denied that the starvation plan of treatment promised more in such cases than the mere common practice of abstaining absolutely from giving opium, keeping the bowels freely open by solid cathartics, or, as some physicians preferred, a hydragogue cathartic, which was both antiseptic and germicidal, giving nourishment by the rectum, when the stomach was tolerant, and using ice or heat locally in the shape of poultices or hot turpentine stupes.

Our Shortcomings: Let Us Reason Together.

This was the title of the presidential address, which was delivered by Dr. Edwin Ricketts, Cincinnati. Speaking of the general practitioner, he said he was the backbone of medicine. It should not be otherwise. With just and co-equal considerate relations the best interests of the physician and specialist were not to be severed. With changed relations toward the general practitioner complications were sure to arise.

Abdominal surgery and gynecology in the hands of all operators was being accompanied with a higher mortality than was true of that done by special workers. Reasons were advanced why the physician and all those engaged in the practice of specialties should enter the political arena. It would teach them what organization was, what and how power can be wielded for good. It would result in pronounced efforts for the organization of the medical profession which in due time was to command respectful consideration from the national, state and county governments. Such would make a free and independent profession.

Abdominal Section During Pregnancy.

Dr. J. Henry Carstens, Detroit, had had the following cases complicating pregnancy: Appendicitis, 5 cases; fibroids, 4; hernia, 1; abdominal hysterectomy, 1; ovariotomy, 3; vaginal hysterectomy, 3, and miscellaneous 3, or altogether 20 cases and 5 deaths, so that the mortality was 25 per cent. This included all his cases. He thought that to-day the mortality would be far less.

All acute diseases requiring prompt operation could be operated on just as well as if pregnancy did not exist. Tumors that would interfere with labor should in all cases be operated on, as there was far less danger attached to their removal during pregnancy than there was by non-intervention and letting the woman go to full term. He had seen most lamentable cases of the latter kind. Tumors above the brim of the pelvis, or which could be shoved above the brim of the pelvis need not be interfered with; still, as a rule, all tumors took on a very rapid growth during pregnancy and the increase in size might interfere with the various functions of life and then surgical intervention was required.

Perforating Ulcer of the Duodenum.

Dr. John B. Murphy, Chicago, read this paper. The diagnosis of perforating ulcer was difficult, or, better, practically impossible without an exploratory laparotomy. In many cases there was no evidence of duodenal disease previous to the perforation.

The most important physical sign, in addition to those of perforative peritonitis from perforations in other portions of the intestinal tract, was the flatness of the superficial piano percussion note in the right hypochondrium.

In all cases of perforative peritonitis, to which duodenal perforations were no exception, operation should be done at the earliest possible moment after perforation had taken place; and experience showed that the mortality was in direct ratio to the length of time that elapsed between the occurrence of perforation and the operation. In perforation the longer the escaping material was in contact with the peritoneum, the greater the danger of destruction of its endothelial covering; and thus the greater the danger of absorption. Of thirteen cases operated on more than thirty hours after perforation, all terminated fatally; while in twelve cases where less than 30 hours had elapsed, 66 2/3 per cent. recovered. The operation must be complete; that is, it must be pursued to an effective suture of the perforation. Drainage was insufficient, as of eighteen cases treated by drainage alone, all died.

The prognosis depended, first, on the virulence of the peritonitis produced; second, the time the material had been allowed to remain in the peritoneum; third, on the presence or absence of blistering or abrasion of the peritoneum at the time of operation.

Peritoneal Tuberculosis.

Dr. Rufus B. Hall, Cincinnati, contended that tuberculosis of the peritoneum in women was not a rare affection. It occurred often enough to make it necessary to consider it in the differential diagnosis of all obscure diseases in the pelvis and abdomen. In a large majority of cases coming under his observation there were no appreciable manifestations of the disease in other parts of the body. In no other condition was there the exact regularity in the afternoon rise of temperature as in tuberculosis. All cases of peritoneal tuberculosis in which there was encysted dropsy, or an accumulation of pus or serum, should be operated on; after the necessary surgical repair the abdomen should be drained. He advocated vaginal drainage in women. First, because it gave perfect drainage; and, second, it prevented ventral hernia which so often followed on account of the fact that the drainage tube must be kept in for so many days.

Surgical Treatment of Perforated Gastric Ulcer with General Infection of Peritoneal Cavity.

Dr. H. Howitt, Guelph, Ont., stated that nothing short of early, bold and thorough surgery could save the patient. After repair of the perforation every pouch and corner in the abdomen was thoroughly inspected by sight and flushed clean. Three rubber drainage tubes were used, not one of which was placed in the wound, but through stabs, one at the back in each flank depression below the kidney, and one in the lower abdomen to the right or left of the incision for the pelvis. He reported good results. In conclusion, the essayist stated that he was aware that many surgeons strongly objected to evisceration in abdominal work; but maintained that in the conditions under discussion it was impossible by any other known method to make certain that the toilet of the peritoneum had been done thoroughly, and said that imperfect toilet was followed by more shock and was vastly more dangerous than hours of properly managed evisceration.

Election of Officers.

The following officers were elected for the ensuing year: President, Dr. L. H. Dunning, Indianapolis; vice-presidents, Drs. Marcus Rosenwasser, Cleveland, and Herman E. Hayd, Buffalo; secretary, Dr. W. W. Potter, Buffalo; treasurer, Dr. X. O. Werder, Pittsburg. Chicago was selected as the place for holding the next meeting in September, 1903.

CANADIAN MEDICAL ASSOCIATION.

Thirty-Fifth Annual Meeting, held in Montreal, Sept. 16-18, 1902.

The President, Dr. F. J. Shepherd, in the Chair.

(Continued from page 789.)

The Abuse of Laboratories.

In the evening of the first day Dr. Francis J. Shepherd, Montreal, delivered the annual presidential address. After a brief résumé of medical progress, the speaker entered a protest against the freedom with which syphilitics are allowed to mingle with the community at large, often causing the innocent to suffer more than the guilty. "It is time," said Dr. Shepherd, "that the profession took this subject up and educated the public to a better knowledge of sanitary laws." Passing on to the subject of modern laboratory teaching, he said: "One danger of this great multiplication of laboratories is that it induces men to pursue original investigation who have not the true scientific spirit, and who are utterly unfit for such work. They frequently collect and publish a mass of useless and undigested material and therefrom draw inaccurate conclusions. But I do not wish it to be inferred that I am opposed to the addition of modern laboratories to our medical schools; they are all necessary, but they must not supplant other work quite as important to a man who wishes to become a practicing physician or surgeon. There is one laboratory which is not so much frequented now as when I was a student; I refer to the hospital wards.

"Students, while perhaps more scientific (microscopic and mechanical) have not the intimate personal knowledge of disease which continued observation at the bedside gives them, so that when started in some out-of-the-way place without their scientific machinery, they are like fish out of water. It may soon be that they will not be able to diagnose a fracture without the *x*-rays, tuberculosis without getting bacilli in the sputum, and so on without end. Students are not taught to observe so accurately the evident symptoms of disease, and as I say, are becoming mere mechanics who need an armamentarium, which only a great hospital or university can possess, to make an accurate diagnosis of an ordinary disease; the higher and more intellectual means of drawing conclusions by inductive reasoning are almost neglected. Mind you, I do not wish to disparage laboratory teaching; it is essential, but we can have too much of a good thing, and laboratories nowadays take up too much of the student's time in the latter years of his curriculum. The ordinary student should have a good working knowledge of laboratory methods, and this should be obtained chiefly during his first two years, but the refinements if insisted on will be acquired at the expense of some more useful and practical information, for the average student can only hold so much knowledge—it is hopeless to attempt to put a quart measure into a pint pot."

Speaking of specialism, Dr. Shepherd thought all physicians should acquire a good working knowledge of all specialties, but an excess of time should not be devoted to any one. A year or two of hospital work, followed by some experience in general practice, should be managed by any one who wishes to become a broadminded specialist.

Referring to modern quackery and the inadequate ideas of many superficially educated practitioners, Dr. Shepherd said: "Many of the doctors who write to papers like the '*Alkaline Clinic*,' the '*Medical Short-Cut*,' and others of such character, have a most misty idea of their profession, and apparently are ignorant enough to deceive themselves as well as the public. I fancy they practice all the 'pathies'; one man from Texas asks the editor if he had anything that is a 'dead-shot' for eczema, another asks what is the most 'up-to-date scientific caper' for goiter, and so on."

At the close of his most interesting address Dr. Shepherd paid a high tribute to the late Dr. Wyatt G. Johnston, Dr. William S. Muir, of Truro, and Dr. Brunelle, of the Hotel Dieu.

Gall-Bladder Disease: Diagnosis.

A general meeting of the association on the second day opened with a discussion on diseases of the gall-bladder and bile ducts. Dr. Alexander McPhedran, Toronto, introduced the medical diagnosis. Of the cardinal symptoms he considered jaundice the most common, while pain varies, but is commonly intense. The attendant fever is usually due to toxic absorption. The main diseases to be considered in differential diagnosis, are catarrhal and suppurative cholangitis and acute yellow atrophy. Most catarrhal conditions are infective, but the chills and fever may occur without pus formation. In the gangrenous cases the symptoms are often ill-defined. A most characteristic sign of gallstone is the recurrence of the attack.

Treatment of Gallstone Diseases.

Dr. A. D. Blackader considers the condition more commonly due to altered secretion of the bile ducts, the altered mucus causing inspissation of the bile. He considers that no drugs stimulate the flow of bile to the same extent as the bile salts. The flow is increased by exercise and deep breathing. Diet should be carefully considered, should be simple and as far as possible should contain a large amount of fat. Such patients should drink plenty of pure water or mineral water. The patient should also have due regard to a proper method of dress; no corsets or constricting clothing should be worn.

The subject of surgical treatment was introduced by Dr. J. F. W. Ross, Toronto. In gangrene and empyema of the gall-bladder he does not advise removal of the gall-bladder, but prefers opening, flushing and draining. In many cases of cystic enlargement of the gall-bladder, however, he advised entire removal of the viscus. It is well to remember, after removal of the gall-bladder, that gallstones may form in the liver and be passed out into the intestines. He considers mucus fistulæ, which occasionally follow operation, as the most troublesome, and said the evil should, as far as possible, be prevented by the use of a small drainage tube. He also drew attention to the importance of being sure that the drainage tubes did not become blocked.

The discussion of the surgical treatment was led by Dr. G. E. Armstrong, Montreal, who recommends the employment of medicinal treatment first in gallstones, and lavage of the stomach before operating on all gall-bladder cases, and as it is difficult to know what the surgeon may encounter on opening the abdomen he advises the administration of calcium chlorid before and after operation to prevent possible hemorrhage.

Foreign Bodies in the Vermiform Appendix.

Dr. James Bell, Montreal, expressed his opinion that appendicitis never depends on the presence of foreign bodies in the lumen of the appendix. There is little doubt, however, that when foreign bodies gain entrance accidentally into the appendix they aggravate an otherwise septic infection.

Dr. Osler's Address in Medicine.

At the evening session of the second day the address in medicine was delivered by Dr. William Osler, Baltimore. In opening his splendid address, Dr. Osler spoke of the noble ancestry of our profession. The broad foundations of our professional dignity were laid on the Hippocratic oath. The solidarity of the medical fraternity is preëminent. Our profession is distinguished from all others by its beneficence: witness, anesthesia, sanitation et al. There is no limit to the science of medicine. The outlook for the profession was never brighter than to-day. Many of the diseases of our grandfathers are vanishing. Dr. Osler then put forward a strong plea for the unity of the profession. A sense of self-satisfaction is all too common in the medical ranks as in other walks in life. Chauvinism is an enemy to progress. Dr. Osler mentioned four forms of Chauvinism, namely, national, provincial, parochial and individual. Nationalism is apt to become a widespread vice in so far as this concerns the medical profession; however, international medical congresses have done much to dispel this spirit.

"It helps a man," said Dr. Osler, "to be a bit of a hero-worshiper." Continuing, he said: "There is a remarkable homogeneity of the profession on this continent, still, there is no little provincialism among the profession. Witness, the various provincial medical councils in Canada and the various state boards in the United States." He considers it an outrage that a graduate of Ontario can not practice in Quebec, or a graduate of Quebec in Manitoba—it is democracy run riot; it is provincialism.

THE GENERAL PRACTITIONER.

The solution of this problem rests with the general practitioner. Dr. Osler here paid a high tribute to Dr. Roddick for his indefatigible energy in pushing through the Dominion Medical Bill. Passing on to speak of parochial Chauvinism, Dr. Osler considered we are all tainted with it to some extent. A good method of counteracting this is to encourage professorial interchanges. Chauvinism in the unit, however, is of much more interest and importance. "The consultants do the writing and the talking—and take the fees," said Dr. Osler; "the backbone, however, of the medical profession is the general practitioner." But he should preserve his mental independence and keep up with the times in literature and appliances.

DIAGNOSIS VERSUS DRUGGING.

"Diagnosis, not drugging, is our chief weapon of offense. Lack of systematic personal training in the methods of the recognition of disease leads to the misapplication of remedies, too long courses of treatment, when treatment is useless and so directly to that lack of confidence in our methods which is apt to place us in the eyes of the public on a level with empirics and quacks." One should not degenerate into a mere dispenser of quack nostrums like the drug clerk who has a specific for everything from the pip to the pox. Beware of the huge manufacturing chemical concerns and of the drummer of the drug-house.

Learning alone is not sufficient; culture is the bichlorid to keep him from intellectual deterioration; and, lastly, charity among the profession; make the Golden Rule our Code of Ethics. Adopt the motto of St. Ambrose—"If you can not speak well of your brother, keep silence." The word of action is stronger than the word of speech.

Typhoid Ulcers.

Three cases of perforating typhoid ulcer successfully operated on were reported by Dr. F. J. Shepherd, Montreal. Dr. Shepherd has always made the lateral incision and has usually found the perforation near the ileocecal valve. By this incision the site of the perforation is more easily found than by the median. He has always closed the incision by turning in the bowel and making use of a continuous Lembert suture, employing fine silk. Other ulcerations in the neighborhood are treated in the same way. Rubber drainage is employed. There is always suppuration in these cases, and usually a hernia as a result. He advises early and rapid operation, and seeing that there are no others likely to perforate.

Election of Officers.

The election of officers resulted as follows: President, Dr. W. H. Morehouse, London, Ont.; vice-presidents, James Warburton, Prince Edward Island; John Stewart, Halifax; W. C. Crockett, Fredericton, N. B.; Dr. Mercier, Montreal; Dr. W. P. Caven, *Toronto;* Dr. McConnell, Morden, *Man.;* J. D. Lafferty, Calgary, N. W. T.; C. J. Fagan, Victoria, B. C.; general secretary, George Elliott, Toronto; treasurer, T. H. Small, Ottawa; executive council, Drs. Moore, Eccles and Wishart, London, Ont. The place of the next meeting will be London, Ont.

Dominion Health Bureau.

Dr. E. P. Lachapelle, secretary of the Board of Health of *the Province of Quebec, moved the following resolution*, which was carried unanimously:

> Whereas, Public health, with all that is comprised in the term sanitary science, has acquired great prominence in all civilized countries, and
>
> Whereas, Enormously practical results have been secured to the community at large by the creation of health departments, under governmental supervision and control, and
>
> Whereas, *Greater authority and usefulness are given to health* regulation suggestions when they emanate from an acknowledged government department; therefore be it
>
> *Resolved,* That in the opinion of the Canadian Medical Association, now in session, the time is opportune for the Dominion Government to earnestly consider the expediency of creating a separate department of public health, under one of the existing ministers, so that regulations, suggestions and correspondence on such health matters as fall within the jurisdiction of the Federal Government, may be issued with the authority of a department of public health.
>
> *Resolved,* That copies of this resolution be sent by the general secretary to the Governor-General in Council and to the Honorable Minister of Agriculture.

Treasurer's Report.

Dr. H. B. Small reported that 317 members had been in attendance, nearly 100 larger than any other previous meeting. All outstanding indebtedness had been paid and there was in the treasury $325. Thus was closed the greatest meeting in the 35 years of the association.

SECOND INTERNATIONAL CONFERENCE FOR THE PREVENTION OF SYPHILIS AND VENEREAL DISEASES.

Held at Brussels, Belgium, Sept. 1 to 6, 1902.

(From Our Special European Correspondent.)

(Continued from page 789.)

Dr. Santoliquido reiterated his opinion that police regulation was a failure and that general educational measures should supplant all supervision. If regulation were to be put in force it should be a medical and not a sanitary control.

Dr. Rethaan Macare, general counselor to the Supreme Court of Holland, also spoke of the inadequacy of reglementation now in vogue in Holland.

Mr. Beco, vice-president of the Congress, said that while it was a fact that, for Brussels at least, the home of reglementation, the system had proven inefficient, it was, nevertheless, not a wise plan to adopt an abolitionist platform. The fault lay, he thought, more in the imperfections of the carrying out of the system than in its principles, and that newer and more modern modifications could use the general plan to advantage. Every illness, he said, had its own prophylaxis, and if syphilis can not be suppressed, as is smallpox, there is no value in stating that an efficient system of prophylaxis may not be found. Time alone can develop a practical system, and the objects of the Congress will have been attained only when the results of various plans have been honestly compared.

Dr. de Stummer, counselor of state of Russia, said that the laws of Russia were now some 50 years old, yet they were such that they might contribute to the discussion. Procurers of *all kinds are very harshly dealt with according to Russian law, minors are prohibited in houses of tolerance*, and it is a crime to have sexual congress with a female minor. In St. Petersburg police supervision has been abandoned, the prostitutes come and go, and one of the results has been that the dispensaries for the treatment of venereal diseases have been empty, as the women come once, and finding they do not have to be treated do not come again. Syphilis is largely on the increase. He thought that the professional prostitute, for the large part, was morally insane. Russian physicians believe in a sanitary police distinct from the ordinary police service.

Dr. Peroni, Turin, spoke of the increased facilities for the treatment of venereal diseases in Turin.

Dr. de Watroszewski, inspector of St. Lazar, Warsaw, thought that reglementation added an evil to that already existing.

Mr. Rethaan Macare proposed the passing of laws which would prevent the marriage of syphilitics. The physician *should report to a central medical and judiciary committee.* This body would have the legal right to prohibit marriage if one of the contracting parties was syphilitic.

Dr. Queyrat, Paris, advocated a general moral crusade, and **Dr. MacCulloch** of the British army presented some figures which would tend to show that in most of the foreign settlements the abrogation of the English contagious disease acts had been followed by an increase in syphilitic infections among the soldiers.

Laws Against Procurers.

Dr. Julian, surgeon to St. Lazare, Paris, said that although the first congress had recommended more stringent measures to be taken against procurers, in France, nothing had been done. This class is a most despicable one and now openly plies its trade in the boulevards of Paris. This constitutes a great menace to the citizens not only of Paris but of all France, if not the entire world, since Paris is one of the great schools for the training of prostitutes who go over the entire world in their career.

Mr. le Jeune, minister of state of Belgium, said that for Belgium, the procurer, cadet, is classed as a special type of criminal, and is so treated. He is not accorded the ordinary privileges of an every-day criminal. He is condemned to seven years' imprisonment by special statutes and he serves his entire time whether he behaves himself or no. Brutal severity alone is his due, as his crime is so atrocious.

The discussion of the subject of public prophylaxis was continued during the morning of the third day. Much had been said by various members of the abolition party about equality of the sexes, the greater part of which met with the hearty approval of all of those present. An extreme section of the Congress maintained that an infected man should be treated in all ways as an infected prostitute. It was frequently pointed out that there was a difference between an occasional buyer and an habitual seller of sexual indulgences and that whereas the contamination might be treated in both sexes alike, that the rules for the control of the prostitute were not logically applicable to the general run of the male sex. Some of the arguments brought out on this general subject afforded amusing incidents in the otherwise very serious tenor of the discussions.

Dr. Hartung, Breslau, brought out the interesting fact that in that city, as well as in some other parts of Germany, it was possible for the physicians of the government clinics to seek out infected men and compel them to undergo treatment. The law regulating the report of cases of venereal diseases is not widely observed.

Prof. Lesser, Berlin, was emphatic that it was important to remember that in the framing of any regulations concerning the better prophylaxis of venereal diseases, the element of professional secrecy must be incorporated. He thought that if this were destroyed the confidence of the patient would be lost and that would lead to a tendency to hide the disease.

An American Point of View.

Dr. Valery Havard, United States Army, reported the results obtained by the Committee of Fifteen and also gave the results of his Havana experiences in the Spanish-American war. Speaking for himself, rather than as an organ of the government, he said that he was, in general, a reglementarist, but was open to conviction. Any system that accomplished the results was to be advocated. Sanitary regulation is wise and justifiable; he maintained that a state was privileged to legalize one evil if a greater one could be remedied thereby. The argument that licensing houses encourages prostitution he does not believe to be just or logical. Statistics of army service seem to show that in countries with regulation—France and Germany—the number of infected soldiers runs from 20-35 per thousand, while in England and America they average 120-155 per thousand. In admitting, however, that regulation can and does diminish infection, it is not necessarily applicable throughout, for reglementation will always be a failure in a country where the spirit of the people, be it better or worse, will not permit its entire application. Moral prophylaxis, he believes, should stand at the head of all measures which are proposed as most universally applicable. The raising of a moral ideal is the most potent factor in army social reform, and church and state should work hand in hand to elevate and educate the youth of the land.

Special Conditions and Local Measures.

Dr. Berthod, Paris, made the novel suggestion, for some countries at least, that insurance companies refuse to accept syphilitics as risks. This measure, he thought, would have some influence in the protection of the young woman from the "*dot*"-seeking husband.

Dr. Blaschko, Berlin, brought out some interesting and important features relative to the *Krankenkassen* (Mutual Sickness-Aid Societies) of Germany. These societies are constantly on the increase and if due attention be paid to the methods of their organization, a very important aid in the prophylaxis of venereal diseases will be in hands of the physicians of these societies. He thought that obligatory illness insurance as it exists to-day in Germany is a very influential factor in the diminution of the spread of venereal diseases and in the reduction of medical pauperization.

Dr. Kohn, Berlin, endorsed Dr. Blaschko's views and spoke of the further influences for good resulting from the distribution among the members of the *Krankenkasse* of pamphlets bearing on all the contagious diseases.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-Second Annual Meeting, held at Allentown, Sept. 16 to 18, 1902.

The President, Dr. F. P. Ball, Lock Haven, in the Chair.

(Continued from page 790.)

Feeble-Mindedness or Arrested Psychical Development.

Dr. J. M. Murdoch, superintendent of the State Institution for Feeble-Minded of Western Pennsylvania, was the author of the address in mental disorders. In the pathogenesis of the condition special stress was laid on the excessive use of alcohol, in one or both parents as an etiologic factor. The medical treatment, he maintained, consists in attention to the hygiene. The mental awakening resulting from an improved state of nutrition and bodily vigor, particularly in children taken from the city to an institution in the country, is often very marked. With the exception of sporadic cretinism and those cases associated with epilepsy, little is to be expected from drugs. He regards the history of the thyroid treatment of sporadic-cretinism the record of one of the most brilliant triumphs of modern medicine. Feeble-minded children do much better when placed with children of like mental capacity, because with those of their own grade they persevere and feel the stimulus of rivalry, while with normal children they become sensitive, discouraged and give up all effort to advance. The situation is one requiring tact, but the diagnosis having been made the truth should be met fairly and squarely and the parents told that unless the child were trained while the brain is still in a condition of plasticity the possibility of training will have gone forever. As a rule, admission to a suitable institution should not be delayed longer than the eighth year.

The Treatment of the Insane in Private Practice.

Dr. F. Savary Pearce, Philadelphia, stated that the earliest possible treatment should be instituted. Acute insanities of hybrid types are the most hopeful in prognosis and are, therefore, the ones to be kept out of asylums to the last effort, especially where hysteria is an element. Children are decidedly better treated in acute alienation outside of asylum walls. He believed it to be the physician's duty to overcome the terror among the laity for the insane and to engender that hopefulness of treatment in private which is so valuable in general medical affections.

Antagonisms to Scientific Medicine.

President Ball, in the annual address, said that science has always found opponents, and the progress of scientific medicine has not escaped this opposition. After considering vaccination and the study of anatomy by dissection, Dr. Ball referred to the strong opposition to animal experimentation. "It seems to me that the life of any number of the lower animals does not weigh in the balance against a single human soul." "Every experimenter agrees that all experiments on animals should be done with the least degree of suffering that is possible with the successful conduct of the experiment. All the truth, however, is by no means learned. We must find a cure for the great white plague, tuberculosis, and for cancer and tetanus. To these ends experiments are necessary and will be performed; if not on animals, they are pretty sure to be performed on man himself, for it is not possible to permanently check the progress of science."

The New Officers.

At the morning session of the second day the following officers were elected: President, Dr. William M. Welch, Philadelphia; vice-presidents, Drs. Herbert H. Herbst, Allentown; G. Franklin Bell, Lycoming; George W. McNeil, Allegheny, and Samuel P. Heilman, Lebanon; secretary, Dr. C. L. Stevens, Athens; assistant secretary, Dr. Theodore B. Appel, Lancaster; treasurer, Dr. George W. Wagoner, Johnstown. The place of next meeting will be York.

Address in Medicine.

Dr. Aloysius O. J. Kelly, Philadelphia, directed attention to the motives that actuated the profession in establishing state medical boards, and to the fact that the original purpose of the state boards had largely been ignored; that, whereas, the laws as originally contemplated were designed to prevent the quack and charlatan from practicing and to insure that reputable physicians only should practice, the laws as at present administered are inoperative against the quack, and seriously inconvenience reputable practitioners. He then directed attention to the "inaninity and assininity" of many of the state medical board questions, and cited a number in illustration of his contention. He advocated two forms of examination: one a recent graduates', the other a practitioners' examination for practitioners of five or more years' standing. In place of the entirely written examination, he advocated the partial substitution of practical tests. Finally, he advocated interstate reciprocity, maintaining that every physician with a good home record should, on presenting his certificate of this fact from his own state board, be allowed to undertake the practice of medicine in any state of his electing.

An Original Operation for Gastroptosis.

Dr. Henry D. Beyea, Philadelphia, detailed "The Elevation of the Stomach in Gastroptosis by the Surgical Plication of the Gastrohepatic and Gastrophrenic Ligaments. An Original Operation." He had devised and practiced the following operation: The abdomen was opened midway between the xiphoid cartilage and umbilicus by an incision three inches in length. Three rows of interrupted silk sutures were placed from above downward and from right to left through the gastrohepatic ligament or omentum and gastrophrenic ligament. When secured these sutures formed a broad transverse fold or plication in and shortened these ligamentary supports and elevated the stomach to normal position. Two subsequent operation have been done, and since the description of the first case, Bier of Greiswald, Ga., 1900, has reported four cases similarly operated on with slight change. Six of the 7 cases have been observed from 65 days to 3 years and in every case improvement in health had been very remarkable and the relief of the symptoms complete. The danger of the operation, with the best aseptic and antiseptic technic, is estimated at 0.25 per cent.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Rheumatism.

Rheumatism is a disease characterized by fever and an inflammatory involvement of the synovial membranes of joints; most frequently the knee, shoulder or ankle. However, the tendency to the development of endocarditis or pericarditis should always be borne in mind. Endocarditis is a complication so frequently occurring that the heart should be examined each time the patient is seen.

INDICATIONS FOR TREATMENT.

Yeo formulates the following general and symptomatic indications for the treatment of this affection:

1. To lessen the local articular inflammation and severe pain by rest and pain-relieving remedies.
2. To modify and change, if possible, the morbid state of the blood and other fluids.
3. To protect the heart as far as we possibly can, from serious and permanent injury.
4. To take suitable measures to immediately reduce hyperpyrexia should it arise.
5. To guard against the tendency to relapses by careful supervision during convalescence.

The first of the foregoing indications can be carried out by giving the patient absolute rest in bed, not even permitting the patient to leave his bed to evacuate either the bowels or the bladder.

FOOD AND DRINK.

To meet the second indication, the diet will have to be regulated and restricted. While the fever lasts and the acute symptoms are present, the patient should be put on and confined to a liquid diet. In the greater per cent. of these cases, the diet should consist of milk alone. It is not unusual, however, to find patients who can not take milk; in these cases, soups, broths, gruel and clam-broth may be substituted.

Patients troubled with rheumatism have almost a constant craving for the acid and cold drinks. Water, of course, should be given freely, pure or in the form of seltzer or lithia water. Yeo recommends a nutritious preparation made as follows: Take a jug containing a pint of milk diluted with a pint of boiled water, and containing 30 or 40 grains of sodium bicarbonate and 10 or 20 grains of sodium chlorid, cooled by a lump of ice; it should be kept near the patient and a tumblerful given him frequently. Another jug should contain a decoction of lemons, made by roughly tearing a lemon to pieces and boiling it for ten minutes in a pint of water, and straining and then adding 20 to 30 grains of potassium bicarbonate, and some ice to cool it. This may be freely drunk at intervals between the milk. Whey may be substituted for the milk if the latter should by chance disagree with the patient. If broths are given they must be free from fat, otherwise decomposition may take place in the stomach and tend to make the stomach sour. Alcoholic beverages should be avoided except where conditions and complications demand them.

In prolonged cases some animal food may be given consisting of light meats, such as chicken or turkey, and occasionally a small amount of beef. Some authors state, however, that no meat or fish should be given for at least a week after the subsidence of the fever, and even then meat may cause a relapse. When convalescence has become established, Thompson recommends eggs, fish, oysters, and the white meat of broiled or roasted chicken and one or two such vegetables as asparagus, spinach or stewed celery, with a baked apple or fresh fruits, but sweets should be avoided.

LOCAL TREATMENT.

Beside rest in bed and absolute immobility of the affected joints, which may be accomplished by placing the limb in splints, local treatment may be resorted to in order to reduce the inflammation and relieve the pain. This is accomplished by wrapping the joints with cotton wool or flannel after applying the following formula as recommended by Dr. Fuller in *Applied Ther.*:

℞.	Tinct opii	℥i	30
	Pot. carbonatis	℥ss	15
	Glycerini	℥ii	60
	Aquæ	℥ix	270

M. Sig.: To be applied locally to the inflamed joints on lint, or the following combination containing ichthyol may be applied:

℞.	Ichthyol	℥ss-℥i	15-30
	Glycerini	℥ss	15
	Adipis	℥ii	60

M. Sig.: Apply to the affected part with friction.

Bamberger, in *Clinical Ther.*, recommends the following, locally:

℞.	Olei sinapis	m. xii		75
	Spts. terebenthinæ	ʒvi	24	
	Linimenti saponis	ʒvi	24	

M. Ft. Linimentum., Sig.: Apply locally.

The following combinations are recommended by *Merk's Archives* for local application:

℞.	Acidi salicylici	ʒiss	6
	Lanolini	ʒv	20
	Olei terebenthinæ	ʒiss	6
	Petrolati	ʒv	20

M. Sig.: Apply locally and wrap the joints in flannel; or:

℞.	Salol	ʒi	4	
	Menthol	gr. xxiv	1	60
	Ichthyol	ʒi	4	
	Lani	℥i	30	

M. Sig.: Anoint the painful joints two or three times daily; or:

℞.	Olei gaultheriæ	ʒi	4
	Acidi salicylici	ʒss	2
	Guaiacol	ʒi	4
	Lani	℥i	30

M. Sig.: Apply several times a day; or:

℞.	Ichthyol	ʒiv	16
	Ext. belladonnæ	ʒi	4
	Ext. opii	gr. xxx	2
	Lani	℥i	30
	Adipis benzoinati	℥i	30

M. Sig.: Rub in well and apply about the inflamed part on lint.

INTERNAL MEDICATION.

Experience has demonstrated to the general practitioner that the salicylates and their derivatives tend to diminish the cardiac complications by diminishing the severity of the attack and shortening its duration. Salicylic acid is not so frequently prescribed because of its insolubility. It may be dissolved by mixing it with ammonium acetate or potassium citrate. It is recommended by Yeo as follows:

℞.	Acidi salicylici	gr. xx	1	30
	Potassii citratis	gr. xl	2	66
	Aq. destil, q. s. ad	℥i	30	

M. Sig.: Two teaspoonfuls in half a glass of water four times a day. The dose may be increased according to the age of the patient and the severity of the attack.

Salicylic acid may be prescribed in the pill form as follows:

℞.	Acidi salicylici	gr. c	6	65
	Gummi acaciæ	gr. xv	1	
	Mucilaginis, q. s. ad.			

M. Ft. pil. No. xxx. Sig.: One to be taken every hour until buzzing of the ears occurs, then one every four hours.

The sodium salt, when given, should be given well diluted with water or milk and if given in the capsule form the patient should be instructed to drink half a glass of water or milk after each dose.

It can be given in solution combined as follows:

℞.	Sodii salicylatis	ʒiv	16
	Sodii bicarb.	ʒii	8
	Aq. menth. pip., q. s. ad	℥iii	90

M. Sig.: One teaspoonful in water four times a day; or:

℞.	Sodii salicylatis	ʒii	8
	Syr. zinziberis	ʒvi	24
	Aquæ, q. s. ad	℥iv	120

M. Sig.: One tablespoonful in water every three or four hours.

In prescribing the salicylic acid, sodium borate may be combined with it to increase its solubility, as follows:

℞.	Acidi salicylici	ʒiii	12	
	Sodii boratis	gr. xl	2	66
	Glycerini	℥i	30	
	Aq. menth. viridis, q. s. ad	℥iv	120	

M. Sig. One to two teaspoonfuls every three hours in water.

Alkalies are of great service to increase elimination and to counteract the acidity, given as follows:

℞.	Potassii bicarb.	ʒiv	16
	Pot. nitratis	ʒiss	6
	Liq. ammon. acet	℥ii	60
	Aq.. q. s. ad	℥iv	120

M. Sig.: Two teaspoonfuls in water every four hours.

The alkalies may be combined with cinchona, as follows:

℞.	Sodii bicarb.	℥i	30
	Pot. acetatis	ʒv	20
	Tinct. cinchonæ	℥i	30
	Tinct. card. comp., q. s. ad	℥iv	120

M. Sig.: Shake and take one teaspoonful every four hours in water.

Salicin has been of service in rheumatism given in combination as follows:

℞.	Salicini	ʒi	4
	Pot. bicarb.		
	Sod. bicarb., āā	ʒiss	6

M. Ft. chartulæ No. x. Sig.: One powder every three hours dissolved in hot water or hot milk.

Aspirin, a more recent preparation, is a very valuable substitute for the salicylates salol or salophen, and its action being similar it may be classified in this group. It may be prescribed as follows:

℞.	Aspirin	ʒiss	6	
	Ext. nucis vom.	gr. v		30

M. Ft. capsulæ No. xii. Sig.: One capsule every four hours.

TREATMENT OF THE CHRONIC FORM.

In the treatment of the chronic form of articular rheumatism the iodid preparations should replace the salicylates. Colchicum, given in the form of the wine, is a valuable remedy if a reliable preparation can be obtained. Too often this preparation is made up by the druggist from the worthless seed or root and the practitioner is consequently disappointed in the results obtained. The gaultheria preparations are unreliable for the same reasons. The iodids and colchicum can be given combined, as follows:

℞.	Sodii iodidi	ʒiii	12
	Vini colchici sem	ʒiii	12
	Spiritus gaultheriæ, q. s. ad	℥iv	120

M. Sig.: One teaspoonful in water after each meal.

The oil of wintergreen is recommended in combination with sodium iodid, as follows:

℞.	Pot. iodidi	ʒiiss	10
	Liq. pot. arsenitis	ʒiss	6
	Olei gaultheriæ	ʒiss	6
	Spts. gaultheriæ, q. s. ad	℥iv	120

M. Sig.: One teaspoonful after each meal, in water.

HYPERPYREXIA.

Bathing should be resorted to in order to reduce the hyperpyrexia in the acute attacks. This may be accomplished by repeated wet packs. By this method slow abstraction of heat takes place and by allowing the patient to remain in the pack for a considerable length of time sweating is produced. If the temperature is not properly reduced in this way, then a cold sponge should be ordered, as in other infectious diseases.

Medicolegal.

SOME OHIO AND NEW JERSEY LEGISLATION OF 1902.

New Jersey—Investigation of Mosquito Problem.—Chapter 98 of the New Jersey Laws of 1902 empowers and directs the New Jersey Agricultural Experiment Station to investigate and report on the mosquitoes occurring within the state, their habits, life history, breeding-places, relation to malarial and other diseases, the injury caused by them to the agricultural, sanitary and other interests of the state, their natural enemies, and the best methods of lessening, controlling or otherwise diminishing the numbers, injury or detrimental effect on the agricultural, sanitary and other interests of the state. To carry out this provision an appropriation of $10,000 is made.

Ohio—Relief of Benevolent and Charitable Hospitals.—On page 644 of the Laws of Ohio of 1902 is an Act which provides that in any county in the state, except in counties containing hospitals supported by public funds, in which is operated, by any corporation or association of persons, a hospital organized or incorporated for purely charitable purposes, in which all the indigent poor of the county requiring the same shall receive medical and surgical treatment free of charge, the county commissioners of such counties may, in their discretion, pay to such hospital association, out of the county poor fund, a sum not to exceed $2500 per year, payable on the first day of January and July, in equal payments, for the maintenance and support of such indigent poor so requiring such treatment, and the reimbursement of such organization so operating such hospital. Provided that nothing in this Act shall be held to authorize the payment of public funds to any sectarian institution.

Ohio—Prohibiting Leaving Samples of Medicine.—On page 146 of the Laws of Ohio of 1902 is an Act which provides that any person who shall by himself, his servant or agent, or as servant or agent of any other person, leave, throw or deposit on the doorstep or premises owned or occupied by another, or who shall deliver to any child under fourteen years of age, any patent or proprietary medicine, or any preparation, pill, tablet, powder, cosmetic, disinfectant or antiseptic, or any drug or medicine that contains poison, or any ingredient that is deleterious to health, as a sample, or in quantity whatever for the purpose of advertising, shall be deemed guilty of a misdemeanor. The terms used in this Act shall include all remedies for internal or external use, either in broken packages or bulk, simple, mixed or compounded. Whoever violates the provisions of this Act shall be guilty of a misdemeanor, and on conviction shall be fined not exceeding $100, nor less than $25, or imprisoned not exceeding 100 nor less than 30 days, or both, for each and every violation.

New Jersey—Tuberculosis Sanatorium.—Chapter 126 of the New Jersey Laws of 1902 provides for the establishment of an institution to be known as "The New Jersey Sanatorium for Tuberculous Diseases." The sanatorium shall be governed by a board of eight managers, each of whom shall be a resident of this state, not more than four of whom shall belong to any one political party, and not less than four of whom shall be physicians in good standing. Among the powers of the board of managers are to appoint a superintendent who shall be a well-educated physician and to appoint, on the nomination of the superintendent, such stewards, matrons, assistant physicians and nurses, as the board may from time to time deem necessary or proper. Any person who has been a resident of this state for at least one year continuously next preceding the application for his or her admission to said sanatorium, and who is in indigent circumstances, may be admitted into said sanatorium and treated therein, without cost, subject to such rules and regulations as the board of managers may from time to time prescribe.

Ohio—Restricting Selling or Giving Away of Cocain.—On page 145 of the Laws of Ohio of 1902 is an Act which provides that whoever sells, barters or gives away any quantity of cocain, except on the prescription of a physician, duly licensed under the laws of the State of Ohio, or sells, barters or gives away any quantity of cocain to any person or persons without having first marked the word "poison" on the label or wrapper containing the same, and registered in a book to be kept by him or her for that purpose, the day and date on which it is sold, bartered or given away, the name and address of the physician who prescribed the same, the quantity thereof, the name, age, sex and color of the person obtaining the same, the purpose for which it is required and the name and place of abode of the person or persons for which the same is intended, shall be fined not more than $500 nor less than $50. But the provisions of this Act do not extend to any person, persons, firm or corporation engaged in selling drugs and medicines at wholesale to sell any quantity of cocain to another person, persons, firm or corporation engaged in selling drugs or medicines at wholesale or retail, in accordance with the laws governing such business.

Ohio—Practice of Medicine.—Section 4403*f* of the Revised Statutes of Ohio is amended by an Act on page 212 of the Laws of Ohio of 1902 providing that any person shall be regarded as practicing medicine or surgery or midwifery within the meaning of this Act who shall use the words or letters, "Dr.," "Doctor," "Professor," "M.D.," "M.B.," or any other title, in connection with his name, which in any way represents him as engaged in the practice of medicine or surgery or midwifery, in any of its branches, or who shall prescribe, or who shall recommend for a fee for like use any drug or medicine, appliance, application, operation or treatment, of whatever nature, for the cure or relief of any wound, fracture or bodily injury, infirmity or disease. The use of any of the above mentioned words or letters, or titles in such connection, and under such circumstances as to induce the belief that the person who uses them is engaged in the practice of medicine or surgery or midwifery in any of its branches, shall be deemed and accepted as prima facie proof of an intent on the part of such person to represent himself as engaged in the practice of medicine or surgery or midwifery. The exceptions, when and to whom this Act shall not apply, are the same as before, with some added provisions as to osteopaths.

New Jersey—Provisions for Contagious Diseases.—Chapter 120 of the Laws of New Jersey of 1902 is an Act to authorize two or more municipalities in this state to jointly establish and maintain hospitals for contagious and infectious diseases, and contracts may be made thereafter with other municipalities to use the same. Chapter 192 authorizes the establishment and maintenance of isolation hospitals in connection with poorhouses. Chapter 130 provides that whenever, within the limits of the territorial jurisdiction of any local board of health of this state, there shall be any person or persons suffering from any contagious, infectious or communicable disease, it shall be lawful for the State Board of Health, if it shall deem it necessary or prudent so to do, to cause a notice in writing, signed by the secretary of said board, to be sent to such local board requiring it to take such action for the restriction of the spread of such contagious, infectious or communicable disease, within such time as the said state board by said notice may specify, and if such action shall not be taken by such local board within the time specified in such notice, then it shall be lawful for the state board to apply to the Supreme Court for a writ of mandamus to compel such local board to take such action. Chapter 225 provides that the State Board of Health, any county board of health and any local board of health, or a majority thereof shall have power to remove, or cause to be removed from any hotel, boarding house, boarding school or other building of like character, tenement or apartment houses, to a proper place designated by such board, persons sick with any contagious, infectious or pestilential disease, and such boards shall also have power to remove, or cause to be removed to a proper place to be so designated, all things and articles within the jurisdiction of such boards, which, in their opinion, shall be infected with any matter likely to communicate disease to the inhabitants of any county or other municipality of this state, and said boards may destroy, or cause to be destroyed, such articles and things, when in their opinion the safety of the public health requires it; provided, however, that no person shall be removed under this Act, except after examination and determination by two physicians in good standing and practice, that such person is sick with a contagious, infectious or pestilential disease. The boards of health above mentioned may, by resolution, delegate the authority herein conferred to any medical inspector in the employ of such boards.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal, September 20.

1 *The Plague; Its "Diffusive Tendency"; Haffkine's Antiplague Virus vs. Dr. Yersin's Serum. James Drummond Burch.
2 *The Radical Treatment of Cancer of the Penis. Edward W. Lee.
3 Perforating Ulcers of the Duodenum. (To be concluded.) John B. Murphy and J. M. Neff.
4 Complications in the Passage of a Gallstone. (Continued.) Neil MacPhatter.

Medical Record (N. Y.), September 20.

5 *Hysteria and Organic Disease; A Study of the Diagnosis with Reports of Cases. Charles L. Dana.
6 *The Family Physician of the Past, Present and Future. S. A. Knopf.
7 A Gunshot Wound of the Abdomen, Inflicting Nineteen Perforations of the Intestines and Four Lacerations of the Mesentery, with Recovery. Robert F. Amyx.
8 *Nasal Disturbances in Typhoid Fever and Their Sequelæ. Max Toeplitz.
9 Diagnosis and Pathology. M. P. Overholzer.

Medical News (N. Y.), September 20.

10 *The Modern Treatment of Fractures of the Lower End of the Radius, as Indicated by the Roentgen Rays. Carl Beck.
11 *Phototherapeutic Apparatus. Milton Franklin.
12 *The Present Status of Cancer; Its Etiology and Pathology; The Value of Laboratory Research. Edward N. Liell.
13 Report of a Case of Non-Traumatic Acute Suppurative Osteomyelitis, with Catarrhal Coxitis, with Remarks. Henry I. Raymond.

Boston Medical and Surgical Journal, September 18.

14 *Notes on a Case of Acute Hemorrhagic Polymyositis. William S. Thayer.
15 *The Effects of Exercise on the Heart and Circulation. R. C. Larrabee.
16 *Suprapubic Cystotomy, without Distending the Bladder. Samuel Crowell.
17 A Case of Neuritis in the Course of Diabetes. F. H. Packard.

Philadelphia Medical Journal, September 20.

18 Sanitation at Atlantic City. Henry Leffmann.
19 *A Clinical Lecture on a Case of General Tuberculosis. W. Hale White.
20 *Medical Representation in Hospital Management. Augustus A. Eshner.
21 Preservative Solutions for Gross Specimens. Randle C. Rosenberger.
22 Syphilitic Necrosis of the Nasal Cavity, Accompanied with Total Blindness. Charles A. Todd.

American Medicine (Philadelphia), September 20.

23 *The Rational Basis for the Dietetic Treatment of Tuberculosis. William H. Porter.
24 *The Differential Leucocyte Count in the Newborn. Louis M. Warfield.
25 Two Aneurysms in a Single Heart. L. M. Loeb.
26 *The Excision of Cancer of the Rectum. Lewis H. Adler, Jr.
27 Uterus Bicornis Unicollis, with Ovarian Abscess and Pelvic [illegible] William Hessert.
28 * [illegible] of the Prostatic Fibers Encircling the [illegible]port of a Case. J. B. Shelmire.
29 Organization and Ethics, or Ways and Means. P. Maxwell Foshay.
30 Medical and Surgical Notes from Asia. Nicholas Senn.

Cincinnati Lancet-Clinic, September 20.

31 *Clinical and Pathological Consideration of Burns. A. Ravogli.
32 *The X-Ray and Trikresol in Alopecia Areata. M. L. Heidingsfeld.

St. Louis Medical Review, September 20.

33 Virchow as a Pathologist. Hugo Summa.
34 Virchow as a Public Man. F. J. Lutz.

Medical Age (Detroit, Mich.), September 10.

35 *Pathologic Conditions Causing Abortion and Premature Labor, with Report of Cases. Francis A. Webb.
36 *Adrenalin in Urological Practice. A. von Frisch.
37 Fibroid Tumors and Pregnancy. Louis Frank.

Journal of Mental Pathology (N. Y.), July.

38 Definition of Progressive Paralysis; Its Differentiation from Similar Forms of Disease. Vladimir Tschisch.
39 The Study of Psychiatry of To-day—Of What Should It Consist? Louise G. Robinovitch.

Washington Medical Annals, September.

40 *The Causes of Cancer. Robert Reyburn.
41 Two Cases of Ligation of Carotid Artery for Inoperable Malignant Growth. Arthur A. Snyder.
42 Case of Sarcoma of Knee. George T. Vaughan.
43 Case of Acute Pemphigus. Samuel S. Adams.
44 Medical Evolution. Jos. T. Howard.
45 Case of Congenital Stenosis of Pulmonary Valve. D. S. Lamb.
46 Case of Sarcoma at the Knee. V. B. Jackson.
47 Two Cases of Typhoid Fever. D. S. Lamb.
48 Case of Aneurism of Abdominal Aorta. G. N. Acker.
49 An Electric Lamp for Examining the Cavities of the Body. R. S. Lamb.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), September.

50 *Possible Aid to the Discovery of the Tubercle Bacilli in Urine. J. P. Bryson.
51 *Cutaneous Sarcoid. William S. Gottheil.
52 A Case of Hyphomycetic Granuloma of the Skin. Jay F. Schamberg.
53 *An Instrument to Diagnosticate Hydrocele. Frederic Griffith.

Brooklyn Medical Journal, September.

54 History of the Ambulance System in Brooklyn, N. Y. W. Schroeder.

Canada Lancet (Toronto), September.

55 Chronic Intestinal Obstruction by Banus as a Sequel of Appendicitis; Operation; Recovery. A. Primrose.
56 Cesarean Section, Coelihysterotomy, Gastrohysterotomy. N. E. MacKay
57 A Case of Hernia of the Bladder. E. R. Secord.
58 A Plea for the Surgical Treatment of Appendicitis. D. Cowles Vanwart.

Annals of Surgery (Philadelphia), September.

59 *On the Avoidance of Shock in Major Amputations by Cocainization of Large Nerve-Trunks Preliminary to Their Division. Harvey Cushing.
60 *Subparietal Rupture of the Kidney. Thomas A. Davis.
61 The Results of Wounds of the Large Joints made by Modern Military Projectiles. Charles B. Nancrede.
62 *Removal of the Superior Cervical Ganglion for the Relief of Glaucoma, with Report of a Case. Colman W. Cutler and Charles L. Gibson.
63 Note on Synchronous Ligation of Both Internal Jugular Veins. J. F. Baldwin.
64 Operative Treatment of Exophthalmic Goiter. Emmet Rixford.
65 Avulsion of the Brachial Plexus, with a Report of Three Cases. Algernon T. Bristow.
66 Note on Permanent Suprapubic Drainage for Advanced Tuberculosis of the Bladder. Charles A. Powers.
67 *Anatomical and Technical Reasons Why the Perineal Is Preferable to the Suprapubic Route in Prostatic Surgery. James E. Moore.

The Post-Graduate (N. Y.), September.

68 A Contribution to the Treatment of Nephroptosis Associated with Enteroptosis. Forbes Hawkes.
69 Incontinence of Urine in the Female. Charles F. Adams.
70 Poisoning. Robert Langerhans.

Hot Springs Medical Journal, August 15.

71 Notes on Unguentum Crede. I. L. Van Zandt.
72 Past, Present and Future Medicine. William F. Barclay.

Interstate Medical Journal (St. Louis), September.

73 *The Etiology of Prostatic Hypertrophy. G. Frank Lydston.
74 *Suspension of the Uterus. E. J. Neville.
75 Nasal Diseases and Obstructions as a Cause of Laryngitis, and Methods for Relief of Same. W. B. Shields.
76 Three Cases of Tinea Circinata in Adults. William P. Loth.

Journal of Eye, Ear and Throat Diseases (Baltimore), July-August.

77 Subconjunctival Injections in Diseases of the Eye. E. E. Gibbons.

Dominion Medical Monthly (Toronto), September.

78 How Much Ophthalmology Should a General Practitioner Know?—With Special Reference to the Discovery of the Cause of Headaches. J. T. Duncan.
79 Where Can Our Consumptive Patients Best Be Treated? J. H. Elliott.
80 Pneumonia. David Hoig.

American Gynecology (N. Y.), August.

81 *Appendicitis and Pelvic Disease. Reuben Peterson.
82 *A Further Contribution to the Study and Practical Significance of Lactation Atrophy of the Uterus. Hiram N. Vineberg.
83 *Technique, Indications and Limitations of Vaginal Section and Drainage for Pelvic Disease. Thomas J. Watkins.
84 Rupture of the Posterior Wall of the Cervix Uteri without Involvement of the External Os, Occurring During Abortion at the Fourth Month: Escape of the Fetus Through the Laceration. Wm. H. Weir.
85 Lacerations of the Cervix Uteri and Pelvic Floor—A Plea for Their More Careful Study, Their Diagnosis and Treatment. Walter L. Burrage.
86 The Advantages, Disadvantages and Results of Suspension of the Uterus. Hunter Robb.
87 *Treatment of Placenta Previa, Based upon a Study of 30 Cases. Joseph B. DeLee.
88 *Resuturing the Suppurating Abdominal Incision. Philander A. Harris.
89 Report of a Case of Splenectomy for Wandering Spleen, Complicated with Typhoid Fever; Recovery. Thomas A. Ashby.

Medical Herald (St. Joseph, Mo.), September.

90 The Suicidal Folly of Self-Drugging. C. H. Hughes.
91 The Diagnosis and Prognosis of Endocardial Murmurs. W. F. Milroy.
92 The Early Care of the Mentally Deranged, the Duty of the State and Private Hospitals to Such Wards. J. M. Barstow.

Merck's Archives (N. Y.), September.

93 Hydrastis Canadensis and Its Alkaloids. J. M. French.
94 The Diuretic Action of Teobromine Derivatives. D. DeBuck.
95 An Index of Diseases, Alphabetically Arranged, with Their Modern Treatment. (Continued.) G. Bjorkman.
96 Sodium Glycocholate in Diseases of the Liver. T. W. Keown.

Therapeutic Gazette (Detroit, Mich.), August 15.

97 *The Employment of Digitalis and Aconite in the Treatment of Cardiac Disease. H. A. Hare.
98 *Report of a Case of Alcoholism Treated with Hyoscine Hydrobromate. R. E. Bering.
99 *Malignant Edema of Both Hands; Recovery without Amputation, Due to the Constant Application of Acetozone. Murdoch Chisholm.
100 Apomorphine in Puerperal Convulsions. T. Neal Kitchens.
101 Saline Infusions, and Their Administration for Meningeal Symptoms in an Infant. Alfred Gordon.
102 Membranous Croup or Diphtheritic Laryngitis. Samuel A. Visanska.
103 *Antagonisms of Cocain and Morphin, Especially Their Actions upon General Metabolism, and the Employment of Cocain in Morphin Poisoning. Edward T. Reichert.

Vermont Medical Monthly (Burlington), August 25.

104 Dislocation of Hip During Normal Labor. L. B. Newton.
105 Posterior Pudendal Hernia, with a Report of Two Cases Complicating Pregnancy. C. W. Milliken.
106 Sanatoria for Persons Afflicted with Tuberculosis. W. N. Platt.

Buffalo Medical Journal, September.

107 *The Early Diagnosis of Pulmonary Tuberculosis. Silvio von Ruck.
108 Experiences in the Philippine Islands. W. P. Kendall.
109 *Congenital Pulmonary Stenosis. (Concluded.) J. Burke.
110 Cancer of the Clitoris. Charles E. Congdon.

Atlanta Journal-Record of Medicine, September.

111 The Problems That Interest Motherhood. Mrs. W. H. Felton.
112 The Relation of Alcoholism to Insanity, Pauperism and Crime. Daniel R. Brower.
113 Defects of Vision or of Hearing in Relation to the Development of Children. A. W. Stirling.
114 Malaria and Pregnancy. A. B. Greiner.
115 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.

Journal of Nervous and Mental Diseases (N. Y.), September.

116 *A Contribution to the Radical Cure of Exophthalmic Goiter, with the Ultimate Results in Eight Cases Treated by Thyroidectomy. J. Arthur Booth.
117 *Acute Hemorrhagic Cortical Encephalitis. Herman H. Hoppe.
118 Paramyoclonus Multiplex: Report of a New Case, with Further History of a Case Reported in 1896, Which Has Since Recovered. F. W. Langdon.

Canadian Journal of Medicine and Surgery, September.

119 Operative Treatment of Ascites Due to Cirrhosis of Liver, by Implantation of the Omentum into the Abdominal Wall. G. A. Peters.
120 Cerebrospinal Meningitis. A. McPhedran.
121 Treatment of Painful Growths, Malignant and Non-Malignant, by the Hypodermic Use of Thiosinamin. J. F. Macdonald.
122 Technique of the Removal of Tubercular Cervical Glands. L. W. Cockburn.
123 Notes from the Operating Theaters of London. F. Winnett.
124 Indications for, and Technique of Operation for Nephroptosis. A. H. Goelet.

Journal of the Michigan State Medical Society (Detroit), September.

125 The Michigan Medical Society; Its First Eighty-three Years, Present Wants, and Suggestions for Their Supply. Leartus Connor.
126 Surgical Advantages. Angus McLean.
127 Etiology of Kidney Disease. Mortimer Willson.
128 Diagnosis of Diseases of the Kidneys. John E. Clark.
129 Uremic Complications in Diseases of the Kidneys. John McLurg.
130 Ocular Manifestations of Nephritis. Walter R. Parker.
131 *The Cerebral Complications of Kidney Disease. Irwin H. Neff.
132 Treatment of Diseases of the Kidneys. Joseph B. Whinery.

Medical and Surgical Monitor (Indianapolis), September 15.

133 The Diagnosis and Treatment of Incipient Tuberculosis. Louis Fischbein.
134 Femoral Hernia, Complicated by Adhesion, Strangulation, Necrosis and Perforation—Anastomosis Operation and Recovery. C. A. Butler.
135 The Influence of the Physician's Wife upon His Professional Success. Walter N. Thompson.

136 The Mineral Springs of Indiana. George T. Palmer.
137 Circumcision. S. H. Malpas.

Texas Medical News (Austin), August.

138 Appendicitis—Its Diagnosis and Treatment. J. C. Van Nuys.
139 Some Severe Stomach Troubles. J. W. Torbett.
140 A Case of Malignant Pustule Treated with Carbolic Acid. A. Malsch.
141 Yellow Fever Quarantine. M. M. Pool.

New England Medical Monthly (Danbury, Conn.), September.

142 Autobiography of the Late J. Milner Fothergill, M.D., London, Eng. (Continued.)
143 A Few Notes on Uric Acid. D. M. Gibson.
144 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.
145 Ergoapiol (Smith) in Diseases of the Female. Charles H. Sheppard.
146 Local Treatment of Skin Lesion in Smallpox. O. Henley Snidor.

Medical Times (N. Y.), September.

147 Study of the Various Phases of Digestion. Wm. Wormley.
148 The Researches into the Cause of Addison's Disease. M. Shellenberg.
149 The Use of Electricity in Nervous Depression and Paralysis. Charles B. Barrett.
150 The Maintenance of Cardiac Compensation. G. R. Johnson.
151 The Efforts Made to Discover the Nature of Cancer. A. M. Leonard.
152 Significant Symptoms in General Paresis. M. E. Fitch.

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1. **The Plague.**—Burch gives an illustrated article advocating the use of Haffkine's serum as a plague prophylactic, quoting authorities and otherwise showing its utility. He finds evidence that possibly does not support the idea promulgated by authorities that Haffkine's inoculations are dangerous in the incubative period, and quotes a letter from Haffkine stating that while the idea seems reasonable it is in opposition to well-known facts.

2. **Cancer of the Penis.**—Lee believes that this is in many cases developed by irritating secretions, filth, trauma, and neglected venereal ulcers, and that recurrence is the rule unless total extirpation has been resorted to. He thinks that no matter whether cancer is hereditary or not, it is well to check the procreative power of the individual, and this is done by total extirpation. He describes the operation as follows: The patient should be placed in the extreme lithotomy position and the pendent portion of the organ wrapped in gauze saturated in carbolized solution, over which is placed rubber tissue. "The penis should be transfixed as near to the root as possible with two straight short needles, on the principle of Wyeth's hip-joint operation; under the needles should be placed a rubber band; then the pendent portion of the penis should be amputated by a transverse division." By this procedure you will have removed all the diseased tissue in the pendent portion and prevented the spread of infection to the healthy tissue. The skin of the scrotum is then incised along the whole length of the raphe; with the finger and the handle of a scalpel, the scrotum is separated into halves quite down to the corpus spongiosum; a full-sized metal catheter is now passed into the urethra as far as the triangular ligament. In passing the catheter it will be necessary to remove the rubber band, which has been placed at the root of the penis, sufficiently to permit the passage of the catheter. A knife is now inserted transversely between the corpora cavernosa and the corpus spongiosum; the catheter having been withdrawn, the urethra is cut across and the deep end of the urethra is then detached from the penis quite back to the triangular ligament. An incision is then made around the root of the penis continuous with that in the median line; the suspensory ligament is divided and the penis is separated, except at the attachment of the crura. The knife is now laid aside, and with a stout periosteal elevator each crus is detached from the pubic arch. This step of the operation involves some length of time on account of the very firm union of the parts to be severed. Four arteries require ligature—the two arteries of the corpora cavernosa and the two dorsal arteries. The corpus spongiosum is slit up for about half an inch and the edges of the divided urethra are stitched to the back part of the incision in the perineum. The scrotal incision is then closed with sutures and a drainage tube is inserted so far back in the deep part of the wound that it can [illegible] brought out in front and behind. No catheter is retained in the urethra. The paper is illustrated.

5. **Hysteria.**—The main objective symptoms of hysteria are grouped by Dana under five heads: the anesthesias, contractures, palsies and tremor, the attacks and the peculiar mental state. The syndrome is most often associated with the traumatic organic lesions, but may appear also with various brain and spinal troubles and more rarely with inflammatory diseases of the nerves. The anesthesias are the most mobile and amenable to remedial measures. The paralyses indicate a deeper and more stable affection, and practically are always associated with anesthesia, often with tremor, and show a much greater tendency to become fixed. The contractures may be fugacious and irregular, like anesthesias, in the so-called contracture diatheses, but in the severer types they are often more distinct and difficult to manage than the paralyses. The mental state of the hysterical is the most profoundly established of all; it is inherent in the mental make-up of the individual. He classifies the anesthesias as unilateral and segmental, though often combined. It is only in hysteria that we have complete anesthesia. The paralyses are usually easily recognized, the general character of the hemiplegia and absence of face involvement and lessened reflexes is well known. The retention of superficial reflexes which are absent or modified in organic hemiplegias, is a point well insisted upon. Hysterical paraplegia, he thinks, is rare, though he does not deny its existence; the paralyses are usually mono- and hemiplegias. The contractures are often puzzling; they come on suddenly without pain or exaggeration of reflexes, no morning relaxation and there is active resistance to reduction. Occasionally they may be associated with pain and be free from characteristic anesthesia. The mental symptoms are varied, including subconscious acts, fixed ideas, amnesias, etc. There is a kind of dementia, mental enfeeblement with mental depression, underlying the mental inactivity and lack of interest. This does not refer to the ordinary hysterical woman, who is usually only a very emotional, selfish, and very foolish creature. The attacks, or crises of hysteria, are, of course, characteristic enough phenomena, but are relatively uncommon in major hysteria. In the diagnosis of hysteria the anesthesia is the most certain criterion, and the paralyses are usually admitted as good helps. The contractures and tremor are more puzzling, but the associated symptoms clear them up. The mental state is generally recognized, when it shows a sharp differentiation from the ordinary condition. The anesthesia of hysteria without much or any paralysis, is usually curable. Profound paralysis is much more serious. The mental state is the worst of all to readjust. He reports cases in full detail.

6. **The Family Physician.**—Knopf's article discusses the relation of the family physician to the specialist and to the public. He thinks that the general family practitioner is not such an enviable person. The remuneration is small compared with the labor, and this makes young men tend to specialties early in their career. He thinks the relation between the specialist and the general practitioner can be improved if the after-care, for instance, of surgical cases were considered as more a part of the surgery and remunerated accordingly, and there is much which the consultant and surgeon or clever specialist can do to bring up the standing of the family physician. As regards public hygiene, he believes the family physician has an important function. One positive conclusion he has arrived at is that the tuberculosis problem never will or can be solved without his help. The amount he can do also as a sanitarian is dilated upon. He summarizes his conception of the family physician of the future as follows: "The family physician of the future will be the cultured, refined gentleman, who through his college training has been duly prepared for the great profession he has chosen to follow. A five-years' course in a medical college not owned or controlled by a private corporation, but by an endowed independent university or State institution, and an additional year of obligatory general hospital training will have fitted him to be a sanitarian, a skilful physician, a trained general surgeon, wise enough to know when council is needed; a physician to be engaged by a number of private families among the well-to-do or by the government

as a guardian of health of a certain number of indigent families. In both cases his remuneration should be large enough, so that he can perform his duties without worry for his daily bread. Leisure and opportunities should be at his disposal, to follow occasionally some special scientific pursuits, if he is so inclined."

8. **Nasal Disturbances in Typhoid.**—The nasal disturbances in typhoid are, according to Toeplitz, drying of the mucous membrane, abrasions of the epithelium, erosions, particularly at the anterior portion of the septum, with occasional, frequently intense and dangerous bleedings. The erosion develops at times into an ulceration, and leads finally also to perforation of the septum. On the other hand, it leads to adhesions with the opposite surface of the lower turbinated body and their sequelæ, which are illustrated by cases. The accessory cavities are liable to be involved. He refers to the literature for evidence of this fact. The respiratory tract also may be affected, particularly the larynx.

10. **Fractures of the Lower End of the Radius.**—Beck's article is an elaborate one and illustrated by numerous skiagrams, without which an intelligible abstract would be difficult; in fact, the paper is too detailed for abstract here and the reader is referred to the original.

11. **Phototherapeutic Apparatus.**—The requisites of a phototherapeutic apparatus to be serviceable are summed up as follows by Franklin: "1. It should be supplied with light by artificial means. 2. The lamp should be as powerful as the circumstances will permit, as no arrangement of lenses or reflectors will coax power out of a feeble lamp. 3. The lamp should be an electric arc using chemically-prepared electrodes calculated to produce a spectrum powerful in the ultraviolet. 4. All lamps of the incandescent principle, of whatever design, are to be avoided. 5. Condensing and collecting lenses should be as large as the nature of things will permit and should be made of rock-crystal or of some medium equally diaphanous to the chemical rays. 6. The cooling apparatus should consist of a layer of water containing no other substance, and sufficiently thick to absorb the greater proportion of the heat-rays. It should be enclosed in some kind of a vessel which will not interfere with the passage of the chemical rays. 7. The machine should be mounted in such a way as to enable the operator to adjust and turn it in any direction with the utmost degree of precision."

12. **The Present Status of Cancer.**—Liell reviews the various theories and researches on cancer and finds that the results in the treatment are as yet decidedly deficient though favorable in contrast to those of only a generation ago. The period of immunity from recurrence after radical operation is increasing and the percentage of apparent cures is greater. He only briefly mentions the use of the Roentgen rays, stating that it appears that the embryonic cells which largely compose the cancerous tissue are made up of unstable molecules more readily rearranged and even destroyed by this agency.

14. **Polymyositis Hemorrhagica.**—This disease is discussed, a case reported and special points in its course specially remarked on, namely, mildness of subjective symptoms of pain and of febrile manifestations, widespread cutaneous discoloration, crepitus in the deltoid muscle. The etiology is not specially elucidated by the case and the prognosis is one which Thayer says must be cleared up by further observations.

15. **Effect of Exercise on the Heart.**—The effect of severe exercise on the blood pressure and the dilatation of the heart are discussed at length by Larrabee, who summarizes that violent exercise causes changes in the blood pressure with temporary enlargement of the heart's area by dilatation or relaxation of the myocardium, and sometimes a fugitive murmur. The cause of the latter is not obvious. The chief result of training is hypertrophy. The abnormal results of exercise are dilatation, which is rare in healthy young men, especially if well trained, and as a result of habitual over-exercise, "irritable heart" and the other conditions associated with dilatation, hypertrophy or myocarditis and generally due in part to other predisposing causes.

16. **Suprapubic Cystotomy.**—Crowell advocates the nondistension of the bladder in suprapubic cystotomy and shows that the anatomic condition does not require it. The peritoneum is so loosely connected to the pubes and the top of the bladder that it can be pushed back and the bladder reached and entered without distending it, and at the same time without entering the abdominal cavity. He reports two cases to show that a flat and empty bladder can be opened quickly, easily, without injury to the peritoneum, and with perfect safety to the patient.

19. **General Tuberculosis.**—White's clinical lecture takes up the etiology of tuberculosis in children, and while he recognizes the possibility of direct heredity, referring to a case of undoubted fetal infection, he thinks it is practically negligible. He criticises the statistics as to the heredity, but admits that life insurance precautions in case of parental tuberculosis are justifiable. He thinks it quite possible that the child may inherit some lowered resistance and discusses the possibility of food infection, which he thinks may occur, but doubts the probability in the present case. He is not prepared to say that milk never produces tuberculosis. The diagnosis of acute miliary tuberculosis is discussed, and he remarks that for the first few weeks we can not make sure of the condition. When the physical signs appear the case is then often mistaken for acute bronchitis, but with a little care this should be avoided. The fact that the lungs are already sometimes emphysematous leads to error. Special points in the case reported are remarked on.

20. **Medical Representation in Hospital Management.**—Eshner believes that there should be a medical representation in hospital boards and refutes the arguments of opponents of this idea, showing that medical men are just as competent or more so, in fact, to manage hospital matters than laymen.

23. **Dietetic Treatment of Tuberculosis.**—Porter's paper is an elaborate one on the dietetic treatment of tuberculosis. He thinks certain foods should be avoided, such as fruits, either cooked or raw, all cereals and breakfast foods, nuts, sweets and pastry of all kinds, potatoes in all forms, onions, tomatoes, turnips, parsnips, carrots, celery, radishes, cabbage, egg- and oyster-plant, corn, etc.; pork in all forms, except occasionally a little crisp bacon and ham; rich gravies and all forms of soup are excluded. The principal reason for the exclusion of these are their disturbance of digestion. He summarizes his study in the following: "1. That a predisposition to tuberculosis is inherited. 2. That tuberculosis *per se* is never inherited, but is always acquired after birth. 3. The disease can be fed into or fed out of the human species. 4. The chief problem in the dietetic treatment of tuberculosis is first to overcome the general malnutrition, and next to establish a higher grade of local nutrition at the infected focuses. 5. The composition, digestibility and percentage absorption of the various foodstuffs and the oxygenating capacity of the system are accurately known. 6. By this knowledge the quantity of food taken can be accurately adjusted, so that the full heat production and constructive utilization of the proteids is secured. 7. The oxygenating and carbon dioxid excreting powers of the system must not be exceeded if the best results are to be secured. 8. By following these accurate laws systematically a perfect diet can be arranged, and the abnormal and pathologic conditions can be changed to the normal, physiologically speaking. 9. The most difficult problem to contend with in the dietetic management of tuberculosis is the loss of appetite and the inability on the part of the system to digest and utilize perfectly a sufficient quantity of proteid material to maintain life and, at the same time, repair the damage already wrought. 10. When this is accomplished a large percentage of tuberculous patients are rapidly and permanently cured, more so than by medicinal treatment or simple climatic changes. 11. A universal adherence to these laws through a century might result in a complete eradication of tuberculosis from the human species."

24. **The Leucocyte Count in the New-Born.**—From a careful study of a number of cases, Warfield finds that the leu-

cocytes at the day of birth are more numerous than at any other time of normal life. The nucleated red blood corpuscles rapidly disappear from the circulating blood, reaching normal within the first three days. The percentage of eosinophiles varies widely in different babies of the same age. The myelocytes and mast cells are only occasionally found and in small numbers. The percentage of large mononuclear and transitional cells is large compared to that in adults. The polymorphonuclear cells at birth are not only relatively but absolutely increased, but begin to decrease soon after birth, and by the eleventh day of a healthy infant's life they are fewer in number than the lymphocytes, while the number of the latter variety of cell has actually increased and the differential count of the leucocytes on the eleventh day is practically identical with the count given in the text-books as normal for the infant's blood.

26. **Cancer of the Rectum.**—Adler holds to the opinion given by him at Atlanta seven years ago, at the meeting of the American Medical Association, namely, that the number of cases where operation is indicated in rectal cancer will always be relatively small, and that at the stage usually discovered by the surgeon it is less amenable to the knife than cancer occurring in other portions of the body and that operation is followed by cure in a very small proportion of cases. The dangers following excision are great and the results as to comfort anything but satisfactory, and yet in properly selected cases if seen early much good can be done by operation.

28. **Chronic Contraction of Prostatic Fibers Encircling the Vesical Neck.**—This condition, which, he says, is noticed only by Fuller among the text-books, is illustrated by the report of a case by Shelmire.

31. **Burns.**—The subject of burns is discussed at some length by Ravogli, who advocates dry powder in the treatment of erythematous burns of the first degree, followed by salves later, if excoriations occur. In second degree burns he has found the application of carron oil useful, though it is opposed by some authorities on account of the danger of infection. He thinks the continuous bath offers more advantages than any other method for exceedingly extensive burns. As regards the prognosis of burns, he believes that a first degree burn covering the whole surface of the body is nearly always fatal, and also burns of the second degree covering, say one-third of the body. In this class there is usually a favorable prognosis, but if it affects a great part of the body, and is in a delicate person, the prognosis becomes serious. A burn of the third degree, even though mild, is always a grave lesion and may often end fatally.

32. **Alopecia Areata.**—Heidingsfeld finds that trikresol, which is a mixture of three cresols, para, meta and ortho, as its name implies, has given him the best results in alopecia areata. He uses it to the exclusion of every other form of medication. Together with the advantages of cleanliness, absence of pain and irritation, it is thoroughly free from any cosmetic objection.

35. **Abortion and Premature Labor.**—Three cases are reported by Webb, who deduces from them the advisability of interrupting pregnancy in certain cases. He condemns the procrastination practiced by many in certain pathologic conditions which would render the prognosis of labor perilous.

36. **Adrenalin.**—Von Frisch employs adrenalin in bladder operations, using it on a cotton sponge, especially in operating on tumors of the bladder and performing suprapubic cystotomy. By this means he can operate without any loss of blood whatever, or none to speak of. For the endoscopic removal of
Thnapillomata of the bladder it is sufficient to fill the bladder
count b adrenalin solution, 1:10,000, which is also a useful pre-
arteries ry to cystoscopy. In very narrow strictures which are
cavernosa anu nter, a few drops of adrenalin, 1:1000, suffice to
is slit up for abolling of the mucosa so as to materially facili-
urethra are stitchection of the sound and the same strength in
perineum. The scrotura is of great assistance in difficult catheter-
a drainage tube is inste the drug in three cases of acute and
wound that it can be bro urine due to hypertrophied prostate,
catheter is retained in the u

causing relief, at first slight, but afterward followed by return of normal function, very much after the manner in which the same result may be observed after successful Bottini operations. The adrenalin instillations were continued for several days. These effects are not to be explained by the quickly-subsiding hemostasis or blanching of the mucosa, but very probably, he says, they stand in direct relation to the immediate effect of the intervention. He believes that in many cases of retained urine following prostatic hypertrophy, in addition to the mechanical impediment caused by the enlargement of the gland, a certain part is played by the excessive muscular tension of the internal sphincter.

40. **Cancer.**—Reyburn holds that cancer is a disease of senility occurring at the time of retrograde metamorphosis, but is rare in tropical countries where the diet of the inhabitants is mostly composed of rice or starchy foods, and is especially prevalent where animal food is largely consumed. It has been noticed to increase of late years with this custom. He therefore suggests the connection between the carnivorous diet and cancer and discredits the parasitic theory.

50. **Tubercle Bacilli in the Urine.**—Bryson recommends as a means of determining the existence of tubercle bacilli in the urine, first the drawing off of the urine and then obtaining what residue remains by hypogastric pressure, that is to say, using the residual instead of tidal urine for the test. He reports several cases in which he says he would have failed to discover the bacilli if reliance had been placed alone in the search of sediment derived by centrifugalization of the tidal urine, and notes that in both cases they were found in unusually large numbers in the residual urine drawn with the catheter.

51. **Cutaneous Sarcoids.**—Gottheil reports a case at length characterized by macular eruption, papulo-tubercular eruption and trophic ulceration, without any marked subjective uncomfortable symptoms or any local or general adenopathy. Microscopically the lesions show that the growths are morphologically sarcomata, but differ from other tumors of the same name in that their growth is limited, and they increase only up to a certain point where they remain either quiescent or undergo retrogressive or degenerative changes. The general health is not impaired, and metastasis to the internal organs occurs very late if at all. These are apparently the cases in which the administration of arsenic has given good results. The term sarcoid, he thinks, is a good one, as showing on the one hand their morphological relationships, and emphasizing their clinical differences on the other.

53. **Hydrocele.**—Griffith advocates an instrument for the diagnosis of hydrocele, which consists simply in a tube or sheet of cardboard, blackened on the inside, through which the scrotal tumor is observed by transmitted light.

59. **Cocainization of Nerve Trunks.**—In order to avoid shock Cushing suggests the use of injection of cocain into the nerve-trunk, effectually blocking the transmission of all centripetal or sensory impulses, preventing the conduction of those impulses resulting from the traumatic insult which otherwise, by acting reflexly through the medullary centers, might become the chief factors in the production of shock. The greater part of his article is devoted to the discussion of operations and the nervous mechanism of shock, which is largely due, he thinks, to a reflex fall of blood-pressure, which is prevented by local anesthetization of the nerve-trunk.

60. **Rupture of the Kidney.**—From the cases quoted and his own experience, Davis concludes that the reduction in mortality since Keen's report is largely due to improved technic. Fewer deaths have been reported from sepsis. Several deaths have occurred from hemorrhage which could undoubtedly have been avoided if more prompt and efficient means had been resorted to. He predicts the mortality will be reduced to 15 per cent. The expectant plan of treatment is permissible in cases where slight hematuria is the only symptom. Tumefaction, much blood in the urine, severe pain and history of great violence, each is a positive indication for prompt operative intervention. Early operation should be done whenever the

history of the case and symptoms point to serious injury of the kidney. Nephrotomy, with gauze tampon, where not too much blood has been lost, and nephrectomy where the kidney is irreparably injured and in less extensive injuries where either sepsis or hemorrhage is likely to prove fatal, are the operations of choice. In delayed cases it may be difficult or impossible to know just what is best to do. Each case must be considered, and if in doubt, operate; most of the cases described as shock are depression of the vital force from hemorrhage or sepsis, and nothing short of prompt surgical intervention will prevent collapse. He says operate on the history of the case rather than wait for symptoms, which may only suggest what should have been done earlier, but at last proclaim the condition without hope for relief.

62. **Sympathectomy for Glaucoma.**—Cutler and Gibson discuss a case of glaucoma and its pathology and report a case. They conclude that glaucoma is a complex disease and that in the acute forms iridectomy must be considered the operation of choice except where there is a tendency to intraocular hemorrhage. In all acute forms the improvement to be expected from iridectomy is less, as the tension of the eye is less marked. until in simple glaucoma the results of the operation are at the most 50 per cent. of successes, while in those cases on the border-line between glaucoma and optic atrophy, iridectomy is of so little value that it has been given up by many ophthalmic surgeons. In these cases, in hemorrhagic glaucoma and in not a few cases where iridectomy has failed to give relief or has done positive injury in the first eye, sympathectomy may prove to be the more conservative operation, especially as there is no evidence to show that the removal of the superior cervical ganglion of the sympathetic has resulted in any injury to the human eye.

67. **Prostatectomy.**—Moore objects to the suprapubic method and considers the perineal route safer and better in all cases except where either the third or lateral lobes are very soft and vascular and project far into the bladder. The operation in which the gland is pulled down by a staff in the bladder or by hooks and forceps from the outside, is a very great improvement on the bimanual operation, in which the bladder is unnecessarily injured. He thinks complete prostatectomy is seldom the operation of choice. The removal of the lateral lobes and third lobe when present, leaving the isthmus and preserving the greater part of the prostatic urethra, will relieve the patient's suffering, and will be followed by better functional results. This can be done in the majority of cases through the median incision. In the exceptional cases where this incision does not afford ample room it can be changed into the inverted Y-incision by adding a lateral incision outward and backward toward the tuberosity of the ischium on either side. These latter incisions should go down to the perineal muscles but not through them, and should not involve the sphincter. This gives abundant room and avoids mutilation of the unoffending bladder.

73. **Prostatic Hypertrophy.**—Lydston remarks that the prostate, while in some respects to be considered as an involuntary muscle, is anatomically and functionally a sexual gland. Its relation to micturition is accidental and we must look to perturbation of the sexual function for the explanation of its hypertrophy, especially of the pathological disturbances not directly due to traumatism or infection. He considers prostatic hypertrophy largely due to overstrain of the organ during the period of its greatest sexual activity, causing glandular proliferation affecting the tissue and muscle hyperplasia. If this persists for a long time it is followed by permanent enlargement. Ungratified sexual excitement as well as sexual excesses may be the cause, and the changes come on earlier in life than we should suppose. In a large proportion of individuals the overgrowth occurs, as a rule, before middle age, but the residual urine does not accumulate until the bladder walls have become atonic from the physiologic changes of age and the insidious effects of unnoticed obstruction. Its occurrence in advanced life from overstrain at an earlier period is explainable on the same grounds as the development of arthritic disturbance in men beyond middle age at the site of a traumatism. Inflammation, gonorrheal or otherwise, is an important factor. He considers senility, gout and rheumatism as not exciting but as determining factors in so far as they promote irritability of tissue, a tendency to connective tissue proliferation, inelasticity of tissue, and in case of the diatheses mentioned, hyperacidity of the urine with frequent micturition. General atheroma may cause enlargement and sclerosis, but this should not be classed as hypertrophy. Disturbance of micturition *per se* is not the cause, but when it arises as the consequence of prostatic hypertrophy, it reacts on the diseased organ, enhancing the pathologic condition. In normal old age the prostate should atrophy and, if it does not do so, it is due to sexual overstimulation and frequency of hyperplasia from the causes mentioned. Neither the human male or female is, on the average, perfectly healthy sexually, and careful rectal examination of men from the age of 20 upward shows that a normal prostate in size, consistency and sensibility is the exception rather than the rule. He thinks we should overhaul and remodel the nomenclature of prostatic disease. As now used the term prostatic hypertrophy is an omnibus term covering a number of different conditions. When this has been done we will hear less of total prostatectomy and more of enucleation of prostatic tumors.

74. **Suspension of the Uterus.**—Neville believes the difficulties of pregnancy and labor following operation for uterine suspension may be overcome to some extent by proper technic. He objects to Kelly's operation and also to the method of suspending the uterus by bringing its anterior face against the anterior wall. The method he suggests is making an abdominal incision just over the symphysis about two inches in length, and, after opening the cavity, the introduction of two fingers and elevating the fundus, bringing it up to the abdominal wall, then carrying two silk ligatures through the fundus on a line posterior to the uterine ends of the tubes, passing the ligatures through the peritoneum, then through the abdominal wall from within outward, thus lessening the chances for infection; not bringing the posterior wall of the uterus in contact with the abdominal wall as does Kelly.

81. **Appendicitis and Pelvic Disease.**—Peterson reviews 87 cases of abdominal section, in 34 of which the appendix was removed and subjected to careful microscopic examination. In one-half of these 34 cases the appendix was normal and in one of the others there was a subacute type of disease; in all others the obliterative form was the most common, next the ulcerative or chronic types. The various pelvic diseases associated are also reviewed at length.

82. **Lactation Atrophy of the Uterus.**—Vineberg calls attention to the fact of the meager notice of this condition in text-books and the comparative neglect of its beneficial action. Normal lactation atrophy may pass into permanent atrophy in rare instances, but he has only met with one such in 65 cases in the past year. The degree of lactation atrophy varies, and he considers it a normal physiologic process favorably promoted by the function of lactation through the reflex action on uterine tissue. He considers that imperfect involution stands next in importance to gonorrheal infection as a positive factor of pelvic disease, and lactation atrophy is largely a protection against this. He also suggests that it is a preventive of cancer, even when laceration of the cervix, etc., exists.

83. **Vaginal Section and Drainage.**—Watkins reviews the conditions in which vaginal section is advisable; in pelvic abscesses in acute cases, if in close proximity to the vaginal wall, and where it is not possible to open the abscess extraperitoneally through an abdominal incision and in which the symptoms indicate great danger in delaying operation until the suppuration extends to the floor of the pelvis. In all circumscribed, large chronic abscesses, with small amount of inflammatory exudate, which can be easily opened through a vaginal incision. The gonorrheal cases are usually bad subjects for this as the gonococci may give trouble. Only a small percentage of cases of pelvic suppuration should be operated on during the febrile period and when operation is required at that time it should usually consist of vaginal section and drainage. In cases of hematocele a free vaginal incision should

be made for the purpose of evacuating the blood and of determining whether the operation shall be completed by drainage or by removal of the affected tube. The danger of hemorrhage is slight if the wall of the hematocele is not disturbed. It should also be the treatment when the hematocele has been infected. The vaginal operation is less dangerous than the abdominal method for this simple pathologic condition. It is also of great value in puerperal infection, excepting, of course, in some cases of gonorrheal infection. Vaginal section and drainage are indicated also in all cases where there is an inflammatory mass or suspicion of one posterior to or at the side of the uterus when the progress of the case is unfavorable after careful attention has been given to the uterine cavity. The operation when carefully done can produce little or no harm and will determine the exact condition of the organs, and if suppuration is found give the patient the best possible chance of recovery.

87. **Placenta Previa.**—De Lee from his experience with 30 cases reported holds that women with placenta previa ought not to die except in rare cases, such as those with air embolism or hemorrhagic diathesis. If the child is viable labor should be induced. When the hemorrhage is moderate one may wait provided the patient is in bed and is in a well-appointed hospital. No one method of treatment will meet all cases. All known measures should be at the hand of the physician. The young practitioner should follow Schroeder, who says that the accoucheur will have the best results in placenta previa who has the least regard for the child. Placenta previa is a formidable condition, more so than most laparotomies, and to ensure the best results the patient should be in a well-equipped obstetric operating room. The best way to induce labor is to puncture the bag of waters and to put a colpeurynter in the uterus, resting on the placenta and pressing this against the cervix, and then put traction on the tube. After labor is inaugurated, or should the case be received when it is already begun and hemorrhage more or less severe has occurred, the treatment should be pursued with vigor and the doctor must not leave his patient until she is delivered and all danger is past. The objects are to stop hemorrhage, to empty the uterus, to secure contraction and retraction of the uterus and to ensure complete hemostasis. He advises against too great contraction or too rapid or early delivery and cautions especially about carrying the patient through the third stage. Infection not rarely occurs during pregnancy, which makes the organ adherent and retention of the placenta is common. If it is advisable to remove the placenta and if the usual means are not immediately successful, insert the hand for that purpose. Post-partum hemorrhage must be watched for and the physician must meet it accordingly.

88. **Resuturing the Suppurating Abdominal Incision.**—The method here suggested by Harris is to reopen the wound and convert the mural abscesses into a widely open field, which will check the flow of pus, and then under anesthesia curette the granulated tissue throughout and reunite the tissues by thoroughly sewing them together, with interrupted interlocking sutures tied alternately on the one side and then the other. The operation is described at length.

97. **Digitalis and Aconite.**—Hare thinks digitalis is often misused; that it is often given where it does harm. In a certain number of cases of valvular disease the patient does not require digitalis or any other cardiac stimulant, though he will be often greatly benefited by the administration of aconite. It has a steadying effect on the heart, through its influence on the vagi, as has digitalis, while by its sedative influence on the heart muscle in cases of excessive compensation, and by its relaxing effects on the blood-vessels, it diminishes the overaction of hypertrophy, which is sometimes confused with the tumultuous overaction of ruptured compensation. Finally, he speaks of the utter uselessness of expecting good results from either of these drugs in the treatment of myocardial disease where the patients are persistently taking severe exercise "for their health."

98. **Hyoscin Hydrobromate.**—In alcoholism, Bering reports a case treated with hyoscin with excellent results. The patient was delirious for the forty-two hours of hyoscin-intoxication, the drug being given hourly for quite a period of time and no food allowed. He says he knows of no other treatment where a man so thoroughly under the influence of whiskey as this patient could be sobered as quickly without any unpleasant effects from the immediate withdrawal of the whiskey. The dose given was 1/200 to 1/100 gr. every hour, followed later by tonics and digestants.

99. **Malignant Edema.**—The case reported by Chisholm is, he thinks, the first one ever saved without amputation. The treatment which saved the patient was the application of gauze soaked in a saturated solution of acetozone, though other applications of carbolic acid, ichthyol, etc., were employed. He remarks that the disease is rare and apt to be overlooked. It has two marked characteristics, the smell, which is very pungent and has been compared to burnt horn, and the edema. The quantity of lotion used daily was six gallons, and it was applied clear up to the armpits and covered with oiled silk. The case was diagnosed microscopically so that there was no mistake as to its nature.

103. **Cocain and Morphin.**—The general conclusions of Reichert's article, which is ended in this number, are in substance as follows: That the antagonistic actions between cocain and morphin are of widespread character, extending to almost every function. They would therefore justify the conclusion that one may be regarded as meeting the important indications of a successful antagonist to the other. 2. That the only important synergistic actions are as excitomotors, and their tendencies in some individuals to cause syncope. 3. Cocain is not only sufficiently powerful to successfully antagonize the profound depressant actions of morphin on general metabolism and body temperature, but as a whole is more powerful, both relatively and absolutely, in morphinized than in normal dogs. 4. That the increase in heat production caused by cocain is due in part to a direct excitation of general metabolic activity, chiefly by motor excitement; and even in the absence of muscular excitement cocain may fully counteract the morphin depression. 5. The effects caused by a given dose of cocain per kilo of the body weight vary in intensity within wide limits. 6. The changes in body temperature following the cocain injection are, with few exceptions, closely related, quantitatively and qualitatively, to the changes in the general metabolism and are, therefore, a fairly reliable index of the intensity of the cocain actions, or of the extent to which the cocain is counteracting or superseding the depressant actions of morphin. 7. The temperature coefficients in normal and morphinized dogs after cocain are practically identical, showing that morphin does not exert any specific actions on heat dissipation, which interfere with the typical temperature-raising actions of the cocain. 8. The typical cocain effects may be delayed in the morphinized animal, and then appear with marked intensity, as shown by the increase of heat production, body temperature, and by motor excitation at a time when in normal animals they are lessening rapidly. Under such conditions the dangers of morphin poisoning may be superseded by those of cocain poisoning. 9. That owing to a coexistent paralytic-convulsant state in the morphinized animal, the administration of cocain or other powerful excitomotor may develop or intensify the convulsant moiety, and thus render a non-lethal dose of morphin lethal, or hasten death when the dose is lethal. In man, the convulsant element is almost without exception so unimportant that there is probably little or no danger of this kind except after unnecessarily large doses of the excitomotor, or in exceptional individuals in whom the excitomotor action of morphin is marked. 10. The value of cocain in morphin poisoning probably depends chiefly on the extent to which it antagonizes the depressant actions of morphin on general metabolism and body temperature. 11. The power of cocain as a respiratory stimulant depends almost solely on its actions on the heat mechanism. 12. That owing to the tendency of cocain to cause syncope in certain individuals, to its excitomotor action, to the marked variability in the intensity of the effects caused by a given dose per kilo of body weight, to the

occasional delay or latency in the typical actions of cocain in morphinized animals, and to the fact of the greater value of small to moderate doses in morphinized dogs, it should be administered in morphin poisoning in man in small doses cautiously repeated.

107. **Tuberculosis.**—The early diagnosis of beginning pulmonary tuberculosis is to be made, according to Von Ruck, mainly from temperature symptoms, pleuritic pain, chest soreness, rough vesicular inspiration, which may be interrupted or of the so-called "cog-wheel" type, independently of transmitted cystolic cardiac impulses. These auscultatory signs indicate a local congestion of the alveoli. Lastly, recourse may be had to tuberculin, which he says is perfectly safe and reliable. The other symptoms which have been recognized from time to time, such as pretuberculous albuminuria, the so-called characteristic facial expression, abnormal conduction of heart sounds, etc., are of less value.

109. **Congenital Pulmonary Stenosis.**—From a discussion of the subject, Burke considers he is justified in assuming that Kussmaul's "die Correctur der Stauung" theory appears to him the most probable as regards the etiologic factors of the origin of pulmonary stenosis, because it sees a cause in the embryological arrest in development, as well as in the fetal inflammatory phenomena, for the development of a congenital pulmonary stenosis. Through this pulmonary stenosis, a series of heart malformations in the fetal condition can be promoted, such as the remaining open of the foramen ovale, as well as eventually the persistence of a septum defect. The ductus Botalli remains uninfluenced or even hindered by the pure physical narrowing of the pulmonary stenosis. In the extra-fetal state the pulmonary stenosis affects the right ventricle, causing stasis in the veins, cyanosis, epistaxis, dilated venous network, etc. If compensatory hypertrophy can occur, it may cause a mixed cyanosis, particularly with the open foramen ovale. Whether this can occur by septum defect is undecided. He concludes that the assertion made by authors that in pulmonary conus stenosis, an accentuation of the second pulmonary sound proves the existence of a co-existing open ductus Botalli, though possible, is supported by absolutely no facts. On the other hand we find two cases directly contradicting it. He holds that an open foramen ovale is sufficient reason to explain the accentuation of the second pulmonary sound. Eight cases in the literature attest this. The statistics of pulmonary stenosis show that we can demonstrate a narrowness of the aorta, also with the pulmonary stenosis, in a series of cases. This is probably due to an arrest in the intrafetal growth and appears as far as statistics show to be a special cause for the frequent occurrence of complicating pulmonary tuberculosis. His paper ends with an extensive bibliography.

116. **Exophthalmic Goiter.**—From a study of the facts and illustrative cases Booth concludes that Graves' disease can be completely cured in some cases by thyroidectomy as well as by bilateral section of the sympathetic. In view of the fact that some cases are cured by internal medication there must be a relative proportion where it does not cause structural changes. No theory can be regarded as adequate without taking into consideration the function of the thyroid gland. Three factors must be considered in the production of the disease: The central nervous system, the connecting fibers, sympathetic and vagus, and the thyroid gland. A lesion of one of these may produce a specific alteration in the others, the consequence of which, together with the exciting cause, may give rise to the symptoms of Graves' disease.

117. **Acute Hemorrhagic Cortical Encephalitis.**—This disorder, called by German authorities the Strümpell-Leichtenstern form, affects both sexes alike and is probably most commonly due to alcoholic indulgence. Most cases are found in adults. Trauma may be the cause of it, either mechanically or by infection. It is generally supposed to be vascular in its origin, the nerve elements being secondarily affected. The outcome may be a complete restoration to the normal or far more frequently in cases that recover there is left some cortical defect which may be shown clinically by some slight paralysis or by epilepsy. These defects may be either scar tissue or cysts. Hoppe reports several cases at length and discusses the symptomatology, noting especially the general and special cerebral symptoms, delirium, etc., the sensory symptoms and general conditions. The diagnosis is often difficult, especially between abscess, meningitis and acute mania, though other conditions may also cause confusion. For the treatment he has used salicylate of soda for the first few days or weeks and later bichlorid of mercury.

131. **Bright's Disease.**—Neff summarizes the facts in regard to cerebral symptoms of Bright's disease as follows: "1. The cerebral symptoms of Bright's disease are dependent upon a lesion, which may be localized or diffused. 2. The syndrome quite often shows variation in intensity of symptoms, and their sudden appearance or disappearance is characteristic. 3. While the brain symptoms are generally terminal or appear late in the disease, a development of general or isolated symptoms is not infrequently seen in the early stages of kidney degeneration. 4. Persistent headache and a neurasthenoid state are suggestive of disordered kidney function. 5. The generalized cerebral symptoms, such as headache, general convulsions, and disturbance of the sensory, motor and psychical centers, are more commonly dependent upon toxemia. 6. The localized cerebral symptoms are generally related to the vascular changes, being the expression of the cirrhotic arterial change which accompanies the kidney degeneration. 7. Uremia is a term often loosely applied to account for many obscure nervous symptoms. Its use should be restricted to those cases where the condition can be determined by thorough urinalysis."

FOREIGN.†

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), September 13.

1 A Discussion on the Value of Systematic Examination of Workers in Dangerous Trades—Lead, Mercury, etc. S. King Alcock, and others.
2 On the Injurious Influence of Fast Aniline Black Dyeing Processes. Wm. F. Dearden.
3 The Acneform Eruption of "Doffers." H. S. Purdon.
4 Some of the National, Ethical and Educational Causes of the Deficiency of Labor Hands. C. F. Moore.
5 The Granting of Certificates of Fitness to Children and Young Persons Employed in Factories and Workshops. C. A. Greaves.
6 The Granting of Certificates of Fitness to Children and Young Persons for Employment in Factories and Workshops. Alexander Campbell.
7 *A Discussion of the Relation of Phthisis to Factory and Workshop Conditions. James Niven.
8 *Discussion on the Development of the Human Urino-Genital Tract. D. Berry Hart.
9 On the Relation of Metabolism to Lymph Formation. F. A. Bainbridge.
10 Development of the Sternum, and Shoulder Girdle in Mammals. A. M. Paterson.
11 Parturition in the Guinea-pig. William Stirling.

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† Some of our readers may be interested to know what journals in foreign languages are indexed in this department. They are as follows, with the name of the editor and his city of residence in most cases.

Annales [illegible]
Annales [illegible] Editor, Guyon, Paris.)
Annales [illegible] urnier, Paris.)
Annales [illegible] l, Paris.)
Annales [illegible]
Anales d [illegible] exico.)
Archiv f [illegible] eopold, Berlin.)
Archiv fi [illegible] Berlin.)
Archiv fi [illegible] (Naunyn, Strassburg.)
Archiv f [illegible] (Pflüger, Bonn.)
Archiv f [illegible] (Baginsky, Berlin.)
Archiv für path. Anat. und Physiologie und klin. Medicin. (Virchow.)
Archiv für [illegible] (B[illegible], Berlin.)
Archives de [illegible] (B[illegible], Paris.)
Archives gén. [illegible] (D[illegible], Paris.)
Allgemeine [illegible] (Berlin.)
Allgemeine [illegible] (Vienna.)
Berliner klin. [illegible]
Beiträge zur [illegible] Path. (Ziegler, Freiburg.)
Beiträge zur Geburtsh. und Gynaekologie. (Hegar, Freiburg.)
Beiträge zur klin. Chirurgie. (Bruns, Tübingen.)
Bolletino Ost. e Ginecologia. (Gigli, Pestalozza, Florence.)
Botkine's Gazette. (St. Petersburg.)
Bulletin Paris Academy of Medicine.
Bulletin Paris Soc. des Hôpitaux.
Bulletin Paris gén. de Therapeutique. (Robin, Paris.)
Bulletin Paris Soc. de Pharmacie.*
Bulletin Paris Soc. d'Electrotherapie.*
Bulletin Médical. (Paris.)

12 A Discussion on Intestinal Secretion and the Action of Drugs Thereon. J. Sydney Edkins.
13 On Electric Phenomena Which Accompany the Oxidation of Oxalic Acid Produced by Exposure to Light. Louis Querton.
14 *On the Movements and Innervation of the Stomach. W. Page May.
15 The Action of Certain Hemolytic Agents on Nucleated Colored Corpuscles. G. N. Stewart.
16 *The Origin of a Visual Impulse. F. W. Edridge-Green.
17 On Some New Properties of Urea (with Demonstrations). W. Ramsden.
18 A Discussion on the Motor Cortex as Exemplified in the Anthropoid Apes. C. S. Sherrington and A. S. Grunbaum.
19 Some Questions with Reference to Occipital Condyles. R. J. Anderson.
20 Germ Infection in Tuberculosis—A Sketch of the Recent State of the Question. Geo. Ogilvie.
21 The Use of Paraffin for Restoring the Bridge of the Nose. Stephen Paget.
22 Absence of the Middle Finger of the Right Hand, with History. A. Robinson.

The Lancet (London), September 13.

23 Presidential Address, British Medical Association at Belfast. James Dewar.
24 *Tetanus and Vaccination: An Analytical Study of 95 Cases of the Complication. Joseph McFarland.
25 A Successful Case of Gastrectomy for Carcinoma of the Pylorus and Lesser Curvature of the Stomach. G. A. Syme.
26 A Case of Hemophilia in a Woman with Symptoms of Defective Circulation in the Legs and Threatened Gangrene of the Toes; Death with Cerebral Symptoms. Joseph A. Arkwright.
27 *The Ultimate Results in a Series of 76 Cases of Fracture of the Tibia and Fibula. R. W. Murray.
28 *The Choice of an Anesthetic for Short Operations upon the Throat and Nose. J. Henry Chaldecott.
29 A Case of Traumatic Rupture of the Spleen; Removal Followed by Empyema and Recovery. Edgar Beaumont and Edward Houseman.

The Practitioner (London), September.

30 *Some Points in the Treatment of Fractures. W. Arbuthnot Lane.
31 *On the Action of Certain Organic Acids on the Intestines, with Its Bearing on the Treatment of Diarrhea. Alfred C. Jordan.
32 *Practical Disinfection in Schools. A. C. Houston.

Semaine Medicale (Paris), xxii,

33 (No. 35.) *Les échanges organiques pendant la période fébrile et la convalescence des maladies infectieuses. A. Jaquet. Critical Review.
34 (No. 36.) *Cancer mélanique de la face. Jaboulay.
35 (No. 37.) *L'augmentation de fréquence du cancer, sa prédominance dans les villes et sa prédilection pour le sexe féminin, sont-elles réelles ou apparentes? R. de Bovis.

Berliner Klinische Wochenschrift, July 21.

36 *Vermeidung der (prevention of) Tetanusinfection bei subcutaner Anwendung der Gelatin. P. Krause.
37 *Zur topischen Diagnostik der Magengeschwülste (gastric ulcers). K. Glaessner.
38 Ueber Amboceptoroidbildung in einem menschlichen Serum. E. Neisser.
39 *Zur Behandlung der Oberkieferhöhleneiterungen (treatment of suppuration in maxillary sinus). Sturmann.

July 28.

40 Certain Questions of the Day in Regard to Tuberculosis. J. Orth.—Ueber einige Zeit- und Streitfragen aus dem Gebiete der Tuberkulose.
41 *Myeloid Transformation of Spleen and Lymphatics. H. Hirschfeld.—Ueber myeloide Umwandlung der Milz und der Lymphdrüsen.
42 Der Lupus erythematodes. E. Holländer.
43 Ueber perniciöse Anaemien. P. Reckzeh. (Commenced in No. 29.)

August 4.

44 Frequency of Absence of Typical Dullness in Appendicitis. Riedel.—Wie oft fehlt die typische Dämpfung in der rechten Fossa iliaca bei der Appendicitis?
45 Fat Tissue Necrosis. P. Wulff.—Zur Fettgewebsnekrose.

August 11.

46 Ueber Heilung und Heilbarkeit der Lungenphthise. D. von Hansemann.
47 Beitrag zur Agglutination des Pestbacillus. A. Aujeszky.
48 Aspirin und Digitalis-Dialysat. Görges.
49 *Eine Krebsstatistik vom path.-anatomischen Standpunkt. W. Riechelmann. (Commenced in No. 31.)

Centralblatt f. Chirurgie (Leipsic), August 30 to September 13.

50 (No. 36.) *Diversion of Portal Blood by Direct Union of the Portal Vein with the Vena Cava. I. Tansini.—Ableitung des portalen Blutes durch die direkte Verbindung der V. portæ mit der V. cava. Neues operatives Verfahren.
51 (No. 36.) Favorable Experiences with the Roth-Dräger Oxygen-Chloroform Narcosis Apparatus. F. Engelmann.—Ueber Erfahrungen mit dem R.-D. Sauerstoffnarkosenapparat.

Centralblatt f. Gynaekologie (Leipsic), August 30 to September 13.

52 (No. 35.) *Zur Casuistik des Accouchement forcé unter Anwendung von Bossi's Dilatator. L. Knapp.
53 Midwifery in Germany. F. Ahlfeld.—Die Zukunft unseres Hebammenstandes.
54 Zwei vaginale Sectio cesarea bei Eklampsie. Jahreiss.
55 *Urethroplastik nach der Idee von Subbotin in der gynakologischen Praxis. V. Grusdeff.
56 (No. 36.) Was ist intraabdomineller Druck? R. Meyer.
57 *Der Belastungs-Kolpeurynter. L. Pincus.
58 Combined Needle and Silk Holder. K. Czerwenka.—Ein Nähinstrument mit Seidenbehälter.

Bulletin Médical de Quebec.
Brazil Medico. (Rio de Janeiro.)
Centralblatt für Bacteriologie und Inf.-Krht. (Uhlworm, Berlin.)
Centralblatt für allg. Path. (Ziegler, Freiburg.)
Centralblatt für Gynaekologie. (Fritsch, Bonn.)
Centralblatt für Kinderheilkunde. (Graetzer, Sprottau.)
Centralblatt für innere Medicin. (Unverricht, Magdeburg.)
Centralblatt für Chirurgie. (König, Berlin.)
Centralblatt die Grenzgebiete der Med. u. Chir. (H. Schlesinger, Vienna.)
Centralblatt die Krht. der Harn u. Sexual-Organe. (Nitze, Berlin.)
Cirurgia Contemporanea. (Mexico.)
Correspondenzblatt f. Schweizer Aerzte. (Jaquet, Basle.)
Cronica Medica. (Avendano, Lima, Peru.)
Cronica Medica. (Abogado, Mexico.)
Cronica Medica de Cordova. (Argentina.)
Dermatologische Zeitschrift. (Lassar, Berlin.)
Dermatologische Centralblatt. (Joseph, Berlin.)
Deutsche Med. Wochenschrift. (Eulenburg and Schwalbe, Berlin.)
Deutsche Archiv f. klin. Medicin. (Krehl, Tübingen.)
Deutsche Zeitschrift f. Chirurgie. (Rose, Berlin.)
Deutsche Zeitschrift f. Nervenheilkunde. (Erb, Heidelberg.)
Echo Médical. (Combemale, Lille.)
Egypte Médical. (Trekaki, Alexandria.)
Fortschritte der Medicin. (Goldscheider, Berlin.)
Frauenarzt. (Freudenberg, Dresden.)
Gazzetta Medica. (Baccelli, Rome.)
Gazzetta degli Ospedali. (Lucatello, Maragliano, Padua and Genoa.)
Gaceta Medica. Mexican Academy of Medicine.
Gaceta Medica da Bahia. (Brazil.)
Gazette Hebdomadaire. (Lereboullet, Paris.)
Gazette Hebdomadaire de Bordeaux.
Gazette des Hôpitaux de Paris.
Gazette Medicale de Paris. (M. Baudouin.)
Gazette de Gynecologie. (Philippeau, Paris.)
La Gynecologie. (Dolêris, Paris.)
Grèce Médicale. (*Foustanos*, Syra, Greece.)
Giornale Turin Academy of Medicine.
Hygiea. (Wising, Stockholm.)
Hospitalstidende. (Asch, Copenhagen.)
Jahrbuch für Kinderheilkunde. (Heubner, Berlin.)
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59 (No. 37.) *Hot Air Treatment in Gynecic Practice. O. Polano.—Zur Anwendung der Heisslufttherapie in der Gynäkologie.
60 Fall von Tetanus nach Gelatineinjektion. R. Gradenwitz.
61 *Extramedian Symphysiotomy. T. H. Van de Velde.—Die Hebotomie.
62 *Zur Sterilisations-Frage. J. Kocks.

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63 *Dangers of Tavel's Saline-alkaline Solution for Subcutaneous Use. Baisch.—Ueber die Gefährlichkeit der Tavel'schen Kochsalz-Sodalosung bei subcut. Anwendung.
64 *Experimentelle Studien über die Eklampsie. W. Weichardt.
65 Bemerkungen zur Morbus Barlowii. H. Neumann.
66 Mode of Origin of Respiratory Sounds. J. Marek.—Ueber die Entstehungsweise der Athemgeräusche. (Commenced in No. 34.)
67 *Zur Technik der mechanischen Behandlung des Hydrops. H. Citron.
68 *Preliminary Report of Certain Results of Cancer Research. E. von Leyden and F. Blumenthal.—Vorläufige Mitteilungen über einige Ergebnisse der Krebsforschung auf der 1ten med. Klinik.
69 *Achievements of Endoscopy in Cases of Foreign Bodies in Air-Passages and Esophagus. G. Killian.—Die diagn. und therap. Leistungen der modernen direkten endoskopischen Untersuchungsmethoden bei Fremdkörpern in den Luft- und Speisewegen.
70 *New Method of Determining Potassium Iodid in the Blood. Karfunkel.—Eine neue Methode des Nachweises von Jodkalien im Blute.
71 Plea for More General Protective Serum Injections in Diphtheria. H. Neumann.—Schützimpfung bei Diphtherie.
72 Value of "Pegnin" in Therapeutics. M. Hirschfeld.—Zur Pegnintherapie.

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73 Ueber total Exstirpation des carcinomatösen Uterus mittelst doppelseitiger Scheidenspaltung (bilateral incision of the vagina). C. Staude.
74 Zur Technik der abd. Totalexstirpation des carc. Uterus. Krönig.
75 Simultaneous Carcinoma in Uterus und Stomach. Krönig.—Gleichzeitiges Vorkommen von Uterus- und Magen-Carcinom.
76 Ein Beitrag zur Aetiologie des wiederkehrenden Icterus gravIditatis. O. Schaeffer.
77 Die Vaginæ- und Ventrofixationen des Uterus. E. Dirmoser.

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78 Ueber die Bildung der Haematocelen. O. Busse.
79 Young Human Ova. Van der Hoeven.—Junge menschliche Eier.
80 Storch's Reaction in Human Milk. M. Thiemich.—Ueber die Storch'sche Reaction der Frauenmilch.
81 *Intra-uterine Colpeurynter in Obstetrics. V. Zimmermann.—Die intraut. Ballonbehandlung in der Geburtshilfe.
82 *Diagnose und Behandlung der Exudate. Dützmann.

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83 (No. 1.) Multibirths. W. Weinberg.—Probleme der Mehrlingsgeburtenstatistik.
84 *Einige Worte über die Menopause. L. Kleinwächter.
85 *The Cautery Eschar in the Abdominal Cavity. K. Franz.—Ueber die Bedeutung der Brandschorfe in der Bauchhöhle.
86 *Myom und Herz. L. Kessler.
87 *Beiträge zur Behandlung der Retroversio-flexio uteri, nach Wertheim. Koblanck.
88 (No. 2.) *Post-Partum Hemorrhages. M. Henkel.—Blutungen nach der Geburt und ihre Behandlung.
89 *Beitrag zur Aetiologie der Post-Partum-Blutungen. F. Ahlfeld.
90 Proportions of Twins from One Ovum. G. Ahlfeld.—Wie stellt sich das Zahlenverhältniss der eineiigen Zwillinge zu den zweieiigen?
91 *Zur Prophylaxie der puerperalen Mastitis. F. Ahlfeld.
92 Contractions of Pregnant Uterus Simulating Myoma. F. Ahlfeld.—Partielle Contractionen des schwangeren Uterus, Myome vortäuschend.
93 Die bacteriotoxische Endometritis. M. Walthard.
94 Was ist zu verstehen unter "modus Baudelocque, Schültze, Duncan"? K. Holzapfel.
95 *Pigment of Skin and Urine During Pregnancy. G. J. Wychgel.—Untersuchungen über das Pigment der Haut und des Urins während der Schwangerschaft.
96 (No. 3.) Ueber Sarcome des Ovariums. A. Stauder.
97 Left Ureter Debouching in Uterovaginal Cyst of Wolffian Duct. R. Meyer.—Einmündung des linken Ureters in eine Uterovaginalcyste des Wolff'schen Ganges.
98 Uterustorsion bei Myom und acuter, nicht entzündlichen Hämatosalpinx. C. H. Stratz.
99 Klinische Beiträge zur Frage der Wochenbettsmorbidität (puerperal morbidity). W. Zangemeister.
100 Alcohol Disinfection. A. Rielander.—Der microsc. Nachweis vom Eindringen des Alkohols in der Haut bei der Heisswasser-Alkohol Desinfektion.—Ibid. K. Fett. (Commenced in No. 1.)

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102 Ueber congenitale Pulmonal-Stenose; 3 Fälle. J. Burke.
103 Zur Diagnose der Tetanie im Kindesalter (in childhood). F. Ganghofner.
104 (No. 6.) *Zur Chirurgie des Leistenhodens (undescended testicle). K. Ploc.
105 *Zur radiographischen Anatomie und Klinik der syphilitischen Knochenerkrankungen an Extremitäten. R. Kienböck.
106 *Ibid der tuberkulösen Erkrankung der Fingerknochen (spina ventosa). Ibid.
107 *Ueber Lupusbehandlung mit dem Lang'schen Luftbrenner (Lang's instrument for hot air treatment). L. Spitzer.
108 (No. 7.) Zur Kenntniss tertiärer Läsionen bei Tumor cerebri. A. Fuchs.
109 Untersuchungen über Hydranencephalie. H. Kluge.
110 Die Pathologie der Bewegungsstörungen (motor disturbances) bei Pseudobulbärparalyse. F. Hartmann.

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111 Transformation of Adenin in Animal Organism. A. Nicolaier.—Ueber die Umwandlung des Adenins im thierischen Organismus.
112 Ueber eine seltene Form von Amyloid- und Hyalin-Infiltration am Circulations- und Digestions-Apparat. F. Steinhaus.
113 Importance of Lymphoid Cells. A. Wolff.—Ueber die Bedeutung der Lymphoidzelle bei der normalen Blutbildung und bei der Leukaemie.
114 Trauma in Etiology of Fat Tissue Necrosis. C. R. Runge.—Ueber die Bedeutung des Trauma in der Aetiologie der disseminirten Fettgewebsnekrose.
115 Zur Wirkung des Urotropins. A. Götzl.
116 Determination of Bromin in Urine and Saliva. G. Sticker.—Die Nachweisung des Broms in Harn und Speichel.
117 Severe Abdominal Symptoms in Incipient Pneumonia or Pleuritis. P. Hampeln.—Ueber schwere Abdominalerscheinungen in Beginn einer Pneumonie oder Pleuritis.
118 Biblisch-Talmudisch Pathologie. J. Preuss.
119 Ueber Asthma dyspepticum. M. Einhorn.

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7. **Phthisis and Factory Work.**—Niven studied the statistics of the Registrar General's office in Great Britain as to the incidence of phthisis among the various classes of workmen. He finds in the County of London, as typifying the effect of large towns, the female phthisis death-rate considerably exceeds the male at the very early ages, but in the later periods of life the death rate of the male considerably exceeds that of the female, both in town and country. He also finds somewhat similar figures in other large towns, such as Manchester. He attributes a large part of the incidence of consumption to alcoholism, which is most prevalent probably among the males, and also to the influence of residence, lodging houses, occupation, etc. He goes over the various occupations and thinks the measures needed to remedy the conditions are: 1. The compulsory notification of tuberculosis so that the patient can be instructed in the precautions needed to protect his fellow workers. All spitting in workshops should be prohibited. Those having the necessity to spit should carry a pocket spittoon. It is impossible to doubt that the habit of spitting in workshops has much to do with the prevalence of phthisis. Increased efforts should be made to secure a systematic wet sweeping instead of the dry sweeping, and the ventilation and lighting should be improved. Hospitals or sanatoriums are also needed and measures for the removal of consumptives from crowded houses. The public house is a very large manufacturer of phthisis among workers.

8. **The Developments of the Human Urogenital Tract.**—Hart reviews the embryologic facts and summarizes that there are practically two views of the constitution of the adult female genital tract: 1. We may, on the one hand, consider the tubes, uterus and vagina to be developed from the Müllerian ducts. The vestibule is derived from the urino-genital sinus. The hymen is a vaginal product. The Wolffian body and duct take no part in the normal development of the genital tract. The former gives the epoöphoron as a normal relic, but the paroöphoron and the traces of the duct lower down are pathologic. The epithelium lining the ducts of Müller is transformed into multiple squamous layers in the vaginal canal and over the portio, but is columnar above the os externum. The second view which he brings forward for consideration is: "That the tubes, uterus, and upper two-thirds of the vagina are Müllerian in origin; the lower third of the vagina and vestibule are derived from the urino-genital sinus, and the hymen from epithelial proliferations of the lower ends of the Wolffian ducts. The vaginal epithelium and that of the portio is, in the adult, of a multiple squamous nature, and arises in the three and a half months' embryo by an upward proliferation from the Wolffian bulbs. The whole internal genital apparatus thus arises in connection with the Müllerian ducts and the Wolffian bodies and ducts, and, so far as concerns the Wolffian ducts, is partly a utilization, and partly a development from these structures."

14. **Innervation of the Stomach.**—May sums up his statistics by saying that the vagus contains both motor and inhibitory fibers for the stomach musculature and that the i[illegible] of these fibers is definite and easily demonstrated.

agree with those of previous observers, but supplement these in certain details. On the other hand, from his studies we can not but conclude that the splanchnic nerves have no influence, either motor or inhibitory, on the muscle wall or stomach, being in opposition, so far as he notes it, to the views of previous workers on the subject.

16. **The Color Sense.**—Edridge-Green's theory is that the visual impulse caused by the different rays of light differs in character just as the rays of light differ in wave length. In the impulse itself we have the physiologic basis of light and in the quality of the impulse the physiologic basis of color. The color according to this theory is perceived by a special center independent of the visual center, but closely connected with it. The existence of a separate color perceiving center is supported by many pathologic facts, and it is obvious that the theory of the omission of a set of fibers does not explain the facts of color blindness and tests based on this theory must fail to be efficient. Therefore, not less than six varieties of color blindness may escape detection by the Holmgren test, and three of these are dangerously color blind.

24. **Tetanus and Vaccination.**—The statistics of tetanus in vaccination are reviewed by McFarland, who considers the following conclusions justifiable: "1. Tetanus is not a frequent complication of vaccination. 2. The number of cases observed during 1901 was out of all proportion to what has been observed heretofore. 3. The cases are chiefly American, and occur scattered throughout the eastern United States and Canada. 4. The cases have nothing to do with atmospheric or telluric conditions. 5. A small number occurred after the use of various viruses. 6. An overwhelming proportion occurred after the use of a certain virus. 7. The tetanus organism is in the virus in small numbers, being derived from the manure and hay. 8. Occasionally, through carelessness or accident, the number of bacilli becomes greater than usual and may lead to the epidemic occurrence of tetanus. 9. The future avoidance of the complication is to be sought for in greater care in the preparation of the vaccine virus."

27. **Fracture of the Tibia and Fibula.**—In the 76 cases of fracture analyzed here by Murray the results were not especially flattering in a large proportion of cases. Murray criticises the vertical foot piece and side splint and suggests that the foot piece should be put at an angle of 70 instead of being vertical, which permits the foot and leg being fixed in the natural position of rest and relieves the tendo Achillis from being in a state of passive tension, thus lessening the tendency of over-riding the fragments. In a certain proportion of cases, however, it is practically impossible by the splint alone to get the broken ends in a correct position. The chief obstacle is, he thinks, hemorrhage into and inflammation of the soft parts. He also adds to this another factor occasionally met, namely, the piercing of adjacent muscles and fascia by the sharp ends of broken bone. He does not, however, consider it necessary in all cases to cut down on the fracture, though in a considerable number this measure is not only justifiable, but called for. From *x*-ray photographs which he has seen of Pott's fracture, he thinks the usual defect beginning after fracture is slight displacement outward and backward. For this the form of splint above mentioned is well adapted.

28. **The Choice of Anesthetic.**—From the study of a large number of operations of tonsillotomy and for adenoids, Chaldecott finds that chloroform has been the means of destroying more than 50 lives during adenoid operations and can not, therefore, be regarded as anything but a dangerous anesthetic, and some of these deaths have occurred in the hands of the skilled and experienced. On the other hand, thousands of these operations are performed every year under gas and gas and ether, and he asks, in view of these facts, are we justified in subjecting patients to the unnecessary risks of the chloroform anesthetic. He thinks decidedly not.

30. **Fractures.**—Two cases of fracture are reported by Lane with skiagraphs and illustrations. He calls attention to the fact that they demonstrate that a structure retains its original form and texture only as long as it is exposed to the influence of the forces which originally determined them in the first instance. Remove the habitual action of these forces, or modify their direction, or let only one group exert an influence, and corresponding changes result at once. The structure of any portion of the skeleton varies with its function or the use to which it is put. They also show the action of the law which he formulated in studying labor changes in the human subject and in animals. The best example of this is the formation of the new joint between the atlas and occiput in the fully developed shoemaker. The sweated shoemaker, as he sits daily for twelve hours or probably a longer period, holds his head in a sloping position, so that it is tilted obliquely to one side. It would thus be of greatest service to him in that it would relieve him of muscular strain if he had projecting up from the lateral mass of the atlas, on the one side to which the skull is tilted, a pillar of bone to articulate with the jugular process of the occipital bone, and form with it a secure joint through which a portion of the superjacent weight could be transmitted. This is exactly what takes place, as he has demonstrated. The subject is fully considered in a paper on "The Anatomy and Physiology of the Shoemaker," in the *Journal of Anatomy and Physiology* for July, 1888. In cases of other mechanics or laborers he has seen in disease of the bone or joints and fractures, evidence of the validity of the same law. In case of fracture through the epiphyseal line, the perfection with which the part is restored to its normal function varies inversely with the age of the subject. In children the great difficulty is the friability of the epiphyses and unless very great care is taken the wire sutures tear out. He criticises the conservatism of many modern surgeons in not operating directly on fractures.

31. **Action of Organic Acids on the Intestines.**—From an experimental study on rabbits, Jordan finds that the majority of organic acids have a decided effect on the mucous membrane of the intestines and he applies these facts to the treatment of diarrhea. Of course, acids differ and they do not usually go far into the intestines on account of the action of bile and alkaline juices. The passage is sometimes, however, made very rapidly in the intestinal canal. Acids may then be directly irritant and cause the local lesions of diarrhea, etc., in their action on the intestines. Moreover, acids produced in the body from food, etc., lactic, butyric, etc., are largely responsible for intestinal irritation, and butyric acid as the chief offender we may assume is liable to be formed from milk and carbohydrates. His work is, he says, only begun, but he thinks this line of research hopeful of results.

32. **Disinfection in Schools.**—Houston's paper reviews the different methods of disinfection and their value. For gaseous disinfection he finds formaldehyd best of all. For furniture, books, etc., too valuable to be destroyed, formalin disinfection may perhaps be sufficient or they may be put in a library especially devoted to the use of infectious patients. He believes in the use of Lingner's glycoformal solution combined with spraying or washing of walls with some germicidal solution; but in the ordinary cases, gaseous disinfection, with formalin vapor and scrubbing the floor with some good disinfectant solution, will be sufficient. For mattresses, blankets, carpets, clothes, etc., saturated steam at 115 C. for thirty minutes is the standard disinfectant. For disinfection of excreta, he recommends corrosive sublimate 1/500 for twenty-four hours or boiling for ten minutes. For linen disinfection he recommends izal 1/100 and corrosive sublimate 1/2000, though boiling the linen or washing it in boiling water is quite reliable. Boiling water is sufficient for the disinfection of cups, saucers, plates, spoons, knives, etc. There is no internal medicine that will render the feces non-infectious as urotropin does the urine. As regards the disinfection of the mouth and throat no very positive view can be expressed. Gargling and washing the mouth with weak disinfectants may be of some small service. The surface of the body may be sponged with corrosive sublimate 1/1000 or izal 1/700, but the disinfection of any surface of the body is rather dubious. As regards baths, there is probably nothing better than soap and water. After each movement of the bowels the soiled parts should be wiped with absorbent cotton wool soaked in a weak disinfectant solution, then with dry wool, afterwards burning the wool. It is not very impor-

tant in some diseases, but is especially so in enteric fever. Brushes, combs and tooth brushes should be considered as infected articles and when the hair is cut the clippings should be burned. For the attendants perfect cleanliness should be the chief consideration, but the use of disinfectant solutions for the hands is advisable. He summarizes the main points for disinfection in the following: "For rooms and for furniture, books, boots, shoes and articles liable to be injured by steam disinfection, formic aldehyd vapor, preferably Lingner's (glycoformal) apparatus, one apparatus for a room 2800 cubic feet, 2 liters of glycoformal being used. Duration of exposure, four hours. For general washing purposes, corrosive sublimate 1 in 1000. Duration of contact, one hour. The mixture to be thorough. For linen, cups, saucers, plates, spoons and knives, boiling water. For bedding, clothes, hangings, carpets, and undergarments (other than linen), saturated steam at 115 C. for thirty minutes." The article is followed by an appendix giving conclusions from various authorities on disinfectants and their value.

33. **Metabolism During and After Infectious Diseases.**—Jaquet concludes from his critical review of the literature that the consensus of opinion now is that the organic interchanges are not accelerated in fever to the extent formerly supposed, but still sufficiently so as to require an extra amount of nourishment during convalescence to compensate for the loss from this cause during the course of the disease.

34. **Melanic Cancer of the Face.**—Jaboulay warns against meddling with a mole. He describes two cases in which a small mole was pricked, squeezed, etc., and became transformed into a malignant melanic neoplasm. Moles are always suspicious of melanosis and should be absolutely left alone. Barbers should be cautioned not to cut them, and they should never be pricked nor scratched with the nail. In one of his cases a medical student, after scarifying a small mole on his hand, excised it. Death soon followed from melanosis. Jaboulay has been giving the other patient quinin, internally and subcutaneously, as the cancer was inoperable. She says that the tumor has diminished in size and is less annoying, but the lesion is too extensive for long survival.

35. **Supposed Increase of Cancer.**—Prof. R. de Bovis of Rheims has been making a special study of cancer, its predominance in cities and its predilection for the female sex, and cites his authorities in detail. They include numerous official demographic reports as well as special articles, and the general conclusion is inevitable that the supposed frightful increase of cancer in recent years has no foundation in fact. The increase may be a fact, but even this is dubious, and it certainly is not so considerable as affirmed by various writers. The data also show that the supposed higher mortality from cancer among women is due to the circumstance that the genital organs are the most frequent seat of cancer in women, and this class of cancer develops at a much earlier age than cancer elsewhere. More women live to grow old than men, and consequently this must be borne in mind in comparing statistics. De Bovis claims that, age for age, the proportion of women affected with cancer is almost identical to that of men, 101 to 100. The compared statistics of the various countries brought to an even basis, indicate that, on the whole, cancer of the rectum is stationary; that cancer of the uterus has considerably diminished and cancer of the mamma and of the extremities still more so. Cancer of the mouth and its adnexa is possibly slightly increasing. The principal increase is in the line of cancer of the viscera. External, accessible cancers are, to say the least, stationary. The increase in frequency of cancer of the internal organs is rendered probable by certain social facts of the day, but the increase indicated by statistics is more liable to be apparent than real. Among the figures he cites are those of the mortality from cancer of the mamma, uterus and mouth in Paris during the last twenty-five years. Mammary cancer has dropped from 26.6 to 23.7; cancer of the uterus from 80.2 to 69.9, while cancer of the mouth is about stationary, 6.6 to 6.4. Cancer seems to be a little more frequent in cities than in the country, but if the statistics could be collected by the same method in each, this greater frequency would be found to be very trifling. Cancer subjects drift to the cities and swell the urban statistics. Another cause of error is the fact that the proportion of adults is higher in the city than in the country. St. Petersburg is the only exception to the general rule that the statistics of cities show a great increase in the number of cases of cancer during the last quarter century. This difference may be due to the fact that St. Petersburg has doubled its population in the last twelve years.

36. **Prevention of Infection from Subcutaneous Injection of Gelatin.**—Krause urges practitioners not to be deterred from the use of gelatin by the accidents that have followed its application when it was insufficiently sterilized. He says that it can be used with confidence after it has been fractionally sterilized in steam at 100 C. for half an hour on five consecutive days. It is too valuable an aid in certain cases to be discarded on account of avoidable accidents.

37. **Topical Diagnosis of Gastric Ulcer.**—Glaessner states that the experience at Ewald's clinic indicates that a gastric ulcer is always located in the fundus when the secretion of rennet-ferment and pepsin is diminished. The site is in the pylorus region when the rennet-ferment is in comparatively physiologic proportions. These findings were constant in eleven patients, and the diagnosis of the localization based on them was confirmed by an operation or the course of events.

39. **Treatment of Suppuration in Maxillary Sinus.**—Sturmann disapproves of strong antiseptics, as they depress the vitality of the mucous membrane. He rinses the sinus copiously with saline solution to wash out all secretions. As they become less in quantity and more mucous, after thorough rinsing, he injects 30 to 50 gm. of a .5 per cent. solution of zinc chlorid or a .25 per cent. solution of silver nitrate. Insufflation of dermatol or tannoform may also prove useful.

41. **Myeloid Transformation of Spleen and Lymphatics.**—This transformation in the course of certain diseases is explained by Hirschfeld as an effort on the part of these organs to aid the insufficient bone marrow in the production of granulated leucocytes. He has examined four cases of myelogenic leukemia under the microscope and the findings invariably confirmed this view.

49. **Statistics of Cancer from the Standpoint of the Pathologic Anatomist.**—Hoffmann has reported that 19.6 per cent. of the cancers found at autopsies had not been recognized during life. Riechelmann found in 58 cases that the diagnosis of cancer made during life was not sustained by the anatomic findings. In 156 other cadavers a cancer was found which had not been diagnosed during life. Path.-anatomic statistics, he states, fail to confirm the assumption that cancer has increased in frequency of late years.

50. **Diversion of the Portal Blood by Direct Union of the Portal Vein and Vena Cava.**—Tansini has tried this new operative procedure a number of times on the cadaver and found it extremely simple and invariably effective. The operation was also performed on 12 dogs and with complete success in 9. The animals whose circulation had been diverted in this way all remained in the best of health and grew fat until they were killed, when the perfect condition of the union of the two veins was determined. The failure was due in one case to defective preliminary technic. The portal vein was isolated and exposed and a small portion of the vena cava. The circulation was temporarily arrested in each with rubber-covered clamps. The portal vein was then ligated close to the hilus of the liver, and divided. A spindle-shaped strip was then cut out of the vena cava between two clamps. The portal vein was then inserted in this slit and fastened in place by a continuous silk suture. The circulation was restored as soon as the clamps were removed and the termino-lateral anastomosis was complete and permanent.

52. **Bossi's Dilator in "Accouchement Force."**—Leopold recently published a series of 17 obstetric cases in which he had had occasion to induce rapid dilation and had found Bossi's dilator of remarkable benefit. Knapp reports similar experience with it at the Prague Maternity, and describes one case in particular in which a phthisic woman was in labor with

20,000 or 30,000, when streptococci were found in the pus, while the figures were lower, 11,000 to 13,000, in cases with the gonococcus or bacterium coli, even when the suppuration was very extensive. He also noticed that in 12 cases of peritonitis and sepsis in which the leucocytes were exceptionally numerous, the patients all recovered, notwithstanding high and protracted fever and bad general condition. On the other hand, all the febrile cases accompanied with normal or subnormal leucocyte count, terminated fatally. When the organism is no longer able to react by summoning hordes of leucocytes to its aid, its resisting power is inadequate to cope with the infection.

84. **Clinical Study of the Menopause.**—Kleinwächter had occasion to observe the course of the menopause in 739 out of 6981 gynecologic patients. In 34.85 per cent. it commenced before the age of 45. In 4.82 per cent. before 30. In 5 it followed a violent metrorrhagia at childbirth. In 8, prolonged or repeated lactation was followed by premature menopause. In one it occurred at 20 as a result of severe puerperal infection. In 48 women who had borne from 7 to 8 children, it occurred before 45, while in 121 others with the same number of children, it did not appear until after the physiologic limit. Among the various points he notices is the importance of differentiating between senile endometritis and carcinoma. The former may persist indefinitely, but carcinoma of the fundus terminates fatally in a year to a year and a half, consequently the duration of the affection is an aid in differentiating. The first symptom of the endometritis is a fetid, seropurulent discharge, usually intermittent. In carcinoma of the fundus there is no discharge at first and when it appears it is bloodstained. Endometritis is very rarely accompanied by bleeding and it is trifling if it occurs, while this symptom never fails in carcinoma of the fundus. The pains from senile endometritis are colicky, subside as the patient reclines and are not violent. The uterus feels soft and flabby, while it is hard in case of carcinoma, and passive movements cause severe pain. The uterus must be straightened if displaced, and a free outlet for the secretions provided, rinsing the uterus with a very weak antiseptic. The mucosa of vagina and uterus in these cases has so little vitality that only the mildest measures can be applied. He encountered 7 cases of senile endometritis; the uterus was in normal position in all. He mentions that carcinoma of the uterus was observed in only .97 per cent. of 6672 Jewesses, while the proportion was 6.35 per cent. in 1228 other women. Carcinoma of the mamma was noted in .18 of 5987 Jewesses and in .6 of 984 other women.

85. **The Cautery Eschar in the Abdominal Cavity.**—Franz experimented on 35 rabbits, using the Paquelin in the abdominal cavity and then watching the fate of the eschar with or without infection. He found that points in the cavity left denuded of peritoneum did not develop any adhesions when aseptic. On the other hand, the eschars resulting from the application of the thermocautery created a predisposition to adhesions and also favored the development of infection.

86. **Myoma and Heart.**—Kessler describes a case of myoma in the fundus uteri in a woman of 54. It had grown to a weight of 60 pounds. The heart under the microscope showed lesions of myofibrosis cordis while the coronary arteries were free from sclerosis. He believes that the microscope would probably reveal lesions in the heart in all such cases. Even a small myoma imposes a certain extra task on the heart by its hindrance to the circulation, and long continuance entails degeneration of the heart in time. If further research confirms this theory of the inevitable degeneration of the heart in cases of myoma, then the necessity of prompt removal of all myomata follows as a matter of course. It prevents future hemorrhages from the myoma. By enucleating the myoma according to Olshausen, the integrity of the reproductive organs is maintained.

87. **Treatment of Retroversio-Flexio Uteri.**—Koblanck reports the results of 23 cases operated on according to Wertheim by vaginofixation of the round ligament. The position of the uterus approximates the normal more closely than after any other operative measure. It can be combined with any desired plastic operation or intervention on the adnexa, and is equally applicable to movable as well as to firmly fastened retroflexion. The uterus retains all its mobility and capacity of distension. [Bucura describes in the succeeding number the anatomic findings in a case operated on by this technic.—Ed.]

88. **Post-Partum Hemorrhages.**—This communication issues from Olshausen's clinic and describes among other things his method of arresting hemorrhage by compressing the abdominal aorta. The uterus is pushed up out of the small pelvis with the palm of the right hand. The pulsating aorta can then be palpated just above the promontory and compressed with the thumb and forefinger of the left hand. Gently rubbing the uterus with the right palm, as this is done, may stimulate it to contract. Compression of the aorta should not be kept up for more than seven to ten minutes, but this allows time for the preparations to be made to rinse out the uterus with hot water. The patients complain of tingling and coldness in the limbs after seven to ten minutes. Atony of the uterus is sometimes due to the chloroform. He therefore restricts its use as much as possible and does not commence to administer it until everything is in readiness, and stops it the moment the clitoris reflex is abolished. He warns that fatal hemorrhage may occur from a laceration in the cervix without a drop of blood emerging from the vagina. Over 2.5 quarts of blood had thus escaped into an experitoneal pocket in one of his cases, supposed to be doing well. Since this occurred he never leaves a patient without carefully palpating the abdomen. When the hemorrhage from a tear in the cervix persisted in spite of tamponing, he ligated both uterine arteries in 6 cases with immediately successful results.

89. **Etiology of Post-Partum Hemorrhages in Certain Cases.**—In Ahlfeld's case the fatal hemorrhage was attributed to atony of the uterus, but investigation of the blood showed an abnormal absence of fibrinogen and an unusually small proportion of organic elements. Coagulation was impossible, but was easily induced in the blood *in vitro* by addition of a little fibrinogen.

91. **Prophylaxis of Puerperal Mastitis.**—Ahlfeld keeps on hand a mixture of 100 gm. tannin in 1000 gm. of 96 per cent. alcohol. Every second day the nipple is washed with water and after it is dry it is swabbed with this fluid which is allowed to dry spontaneously before the clothing is replaced. He has scarcely had a case of suppurative mastitis in his experience during the two years since this measure has been systematically applied. He applies ice bags day and night to abort an incipient mastitis.

95. **Iron in Pigment of Skin and Urine During Pregnancy.**—Wychgel announces that the pigment of the skin and urine of pregnant women contains decidedly more iron than those of non-pregnant women. It must be derived from hemoglobin. He suggests that possibly this hemolysis may be due to the sweeping away of fragments of villi and the consequent production of cytotoxins in the serum.

104. **Surgery of Undescended Testicle.**—Ploc reports 16 patients between 4 and 29 years of age, operated on with satisfactory results. There was complicating hernia in 11. The ectopic testicle swells and causes pain as puberty advances. In 9 the results were ideal and all were freed from their previous disturbances. He describes his technic with numerous illustrations.

105, 106. **Radiographic Differentiation of Syphilitic and Tubercular Bone Affections.**—Kienböck illustrates the radiographic findings in 31 cases, but remarks that radiography alone is scarcely able to differentiate a bone lesion, although it is a most valuable supplementary aid. It has shown, for instance, that acute atrophy of the bones usually accompanies infectious osteomyelitis and tuberculosis, adjacent to or even at some distance from the focus. This disturbance in the nutrition of the bone is not observed in case of a syphilitic affection, and neither are there alterations of the skin and muscles as in the former case. Gummatous tissue casts a shadow characteristic in shape, location and saturation.

107. **Lang's Hot Air Apparatus.**—Spitzer reports the results of treatment of 32 patients with lupus by the application of superheated air. Lang uses for the purpose an ordinary Paquelin provided with a curved, conical cap open at the tip. Air is forced into the cap heated by the thermocautery and projected from the tapering cap in a fine stream. An asbestos ring protects the operator's hand from returning hot air. The air is supplied by two rubber bulbs squeezed alternately so that the supply is continuous. The burns thus induced were not accompanied by the general symptoms of ordinary burns. Albumin never appeared in the urine and the general health showed no disturbance. The instrument has been used during the last year and one-half and was applied forty-five times. The short course of the treatment, the fine soft scars, its applicability to extensive surfaces, its ready use by any general practitioner, and especially the fact that recurrences seem to be less frequent after it than after any other method, commend it for general adoption. The small instrument can be manipulated as easily as a pencil. The burned patches heal over in less than half the time than after Paquelinization. By the third day a resorcin salve can be substituted for the moist compresses applied at first. This treatment has proved particularly effectual in old cases with elephantiasic indurations.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A System of Physiologic Therapeutics. A Practical Exposition of the Methods, Other Than Drug-Giving, Useful in the Prevention of Disease and in the Treatment of the Sick. Edited by Solomon Solis-Cohen, A. M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic. Volume IX. Hydrotherapy, Thermotherapy, Heliotherapy, and Phototherapy. By Dr. Wilhelm Winternitz, Professor of Clinical Medicine in the University of Vienna. Assisted by Dr. Alois Strasser and Dr. B. Buxbaum; and Balneology and Crounotherapy by Dr. E. Heinrich Kisch. Illustrated. Cloth. Pp. 570. Price, $27.50 per set. Philadelphia: P. Blakiston's Son & Co. 1902.

The International Text-Book of Surgery. In Two Volumes. By American and British Authors. Edited by J. Collins Warren, M.D., LL.D., F.R.C.S. (Hon.), Professor of Surgery, Harvard Medical School; and A. Pearce Gould, M.S., F.R.C.S., of London, England. Second Edition, Thoroughly Revised and Enlarged. Vol. I. General and Operative Surgery. *Royal Octavo of 965 Pages*, with 461 Illustrations, and 9 Full-paged Colored Lithographic Plates. Vol. II. Special or Regional Surgery. Royal Octavo of 1122 Pages, with 499 Illustrations, and 8 Full-paged Colored Lithographic Plates. Cloth. Price, $5.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Diseases of the Stomach. Their Special Pathology, Diagnosis and Treatment, with Sections on Anatomy, Physiology, Chemical and Microscopical Examination of Stomach Contents, Dietetics, Surgery of the Stomach, etc. By John C. Hemmeter, M.D., Ph.D., Professor in the Medical Department of the University of Maryland, *Baltimore. With Many Original Illustrations*, a Number of Which Are in Colors and a Lithograph Frontispiece. Third Enlarged and Revised Edition. Cloth. Pp. 894. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

Atlas and Epitome of Traumatic Fractures and Dislocations. By Professor Dr. H. Helferich, Professor of Surgery at the Royal University, Greifswald, Prussia. Edited, with Additions, by Joseph C. Bloodgood, M.D., Associate in Surgery, Johns Hopkins University, Baltimore. From the Fifth Revised and Enlarged German Edition. With 216 Colored Illustrations on 64 Lithographic Plates, 190 Text-Cuts, and 353 Pages of Text. Cloth. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Diseases of the Rectum and Anus. Designed for Students and Practitioners of Medicine. By Samuel Goodwin Gant, M.D., LL.D., Professor of Rectal and Anal Surgery at the New York Post-Graduate Medical School and Hospital. Second Edition, Rewritten and Enlarged, with 37 Full-page Plates, 20 of Which Are in Colors, and 212 Smaller Engravings and Half-tones. Pages, xxiv-687. Royal Octavo. Extra Cloth. Price, $5.00 net. Philadelphia: F. A. Davis Company.

A Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. New (3d) Edition. Enlarged and Thoroughly Revised. In One Very Handsome Octavo Volume of 756 Pages, with 474 Engravings, of Which 60 Are in Colors and 22 Colored Plates. Cloth. Price, $5.00 net. Philadelphia and New York: Lea Brothers & Co.

A Text-Book of Materia Medica, Therapeutics, and Pharmacology. By George F. Butler, Ph.G., M.D., Professor of Materia Medica and Therapeutics in the College of Physicians and Surgeons, Chicago, Medical Department of the University of Illinois, etc. Fourth Edition, Thoroughly Revised. Handsome Octavo Volume of 896 Pages, Illustrated. Cloth, $4.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Hand-Book of Medical and Orthopedic Gymnastics. By Anders Wide, M.D., Lecturer in Medical Gymnastics and Orthopedy in the Royal Carolean Medico-Surgical Institute and Director of the Gymnastic Orthopedic Institute, Stockholm. With a Frontispiece and 94 Illustrations in the Text. Second Revised Edition. Cloth. *Pp. 373. Price, $3.00 net.* New York: Funk & Wagnalls Co. 1902.

A Text-Book of the Surgical Principles and Surgical Diseases of the Face, Mouth, and Jaws. For Dental Students. By H. Horace Grant, A.M., M.D., Professor of Surgery and of Clinical Surgery, Hospital College of Medicine. Octavo Volume of 231 Pages, with 68 Illustrations. Cloth. Price, $2 50 net. Philadelphia and London: W. B. Saunders & Co. 1902.

A Text-Book of Practical Diagnosis. The Use of Symptoms in the Diagnosis of Disease. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Illustrated with 236 Engravings and 25 Plates. Cloth. Pp. 698. Price, $500. Philadelphia and New York: Lea Brothers & Co. 1902.

Essentials of Histology. By Louis Leroy, B.S., M.D., Professor of Histology and Pathology, Vanderbilt University, Medical and Dental Departments. Second Edition, Thoroughly Revised and Greatly Enlarged. 16mo. Volume of 263 Pages, with 92 Beautiful Illustrations Cloth. Price, $1.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

A Text-Book on Diseases of Infancy and Childhood. For the Use of Students and Practitioners. By Henry Koplik, M.D., Attending Pediatrist to Mt. Sinai Hospital, New York. Illustrated with 169 Engravings and 30 Plates in Color and Monochrome. Cloth. Pp. 675. Price, $5.00. New York and Philadelphia: Lea Brothers & Co. 1902.

The Treatment of Fractures. By Chas. L. Scudder, M.D., Assistant in Clinical and Operative Surgery, Harvard Medical School. Third Edition, Revised and Enlarged. Octavo, 480 Pages, with 645 Original Illustrations. Polished Buckram. Price, $4.50 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Essentials of Diseases of the Ear. By E. B. Gleason, S.B., M.D., Clinical Professor of Otology, Medico-Chirurgical College, Philadelphia. Third Edition, Thoroughly Revised. 16mo. Volume of 214 Pages, with 114 Illustrations. Cloth. Price, $1.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Photographic Atlas of the Diseases of the Skin. By George Henry Fox, A.M., M.D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, New York. Part XV. Philadelphia and London: J. B. Lippincott Co. 1902.

Typhoid Fever. By J. T. Moore, M.D., M.C.P. S., Professor of Theory and Practice of Medicine, Medical Department of Hamline University, Minneapolis, Minn. Pp. 159. Price, $1.00 net. Chicago: G. P. Engelhard & Co. 1902.

General Paresis: Practical and Clinical. By Robert Howland Chase, A.M., M.D., Physician-in-Chief, Friends Asylum for the Insane. Illustrated. Cloth. Pp. 291. Price, $1.75. Philadelphia: P. Blakiston's Son & Co. 1902.

Transactions of the American Dermatological Association, at Its Twenty-first Annual Meeting, Held in Chicago, Ill., May 30 and 31, and June 1, 1901. Cloth. Pp. 216. New York: Rooney & Otten Printing Co. 1902.

Transactions of the American Microscopical Society. Twenty-fourth Annual Meeting Held in Denver, Colo., Aug. 29, 30 and 31, 1901. Vol. XXIII. Paper. Pp. 294. Lincoln, Neb.: Jacob North & Co., Printers. 1902.

Annual Report of the Essex County Hospitals for the Insane, Newark, N. J., for the Year Ending April 30, 1902. Paper. Pp. 105. Newark, N. J.: Groebe-McGovern Co. 1902.

Proceedings of the Philadelphia County Medical Society. September, 1902. Paper. Pp. 238. Philadelphia: Published by the Society.

Proceedings of the New York Pathological Society. May, 1902. Paper. Pp. 87. New York: Published by the Society.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Sept. 11 to 17, 1902, inclusive:

Irvin E. Bennett, captain and asst.-surgeon, Vols., honorably discharged from the service of the United States, to take effect Oct. 15, 1902, his services being no longer required.

Henry L. Brown, contract surgeon, leave of absence for two months granted.

Justus M. Brown, colonel and assistant surgeon-general, leave of absence for three months granted, to take effect upon the assignment of a medical officer to take charge of the medical supply depot in New York City, during his absence.

Carl R. Darnall, captain and asst.-surgeon, in addition to his present duties in the office of the surgeon-general, is detailed as assistant professor of hygiene at the Army Medical School, Washington, D. C.

William O. Davies, captain and asst.-surgeon, Vols., honorably discharged, to take effect Oct. 15, 1902, his services being no longer required.

Calvin DeWitt, colonel and assistant surgeon-general, is detailed president of the faculty of the Army Medical School, relieving Colonel Charles Smart, assistant surgeon-general.

Alfred C. Girard, colonel and assistant surgeon-general, is relieved from further duty in the office of the surgeon-general of the Army; he will remain in Washington, D. C., as a member of certain examining boards.

Joseph B. Girard, colonel and assistant surgeon-general, on being relieved from duty at Honolulu, will proceed to San Francisco, Cal., and report by telegraph to the adjutant-general of the Army for orders.

John N. Goltra, contract surgeon, from Fort Brady, Mich., to duty at Fort Assiniboine, Mont.

George H. R. Gosman, lieutenant and asst.-surgeon, is relieved from duty at Fort Hancock, N. J., and assigned to temporary duty at Fort Wadsworth, N. Y.

John D. Hall, lieutenant-colonel and deputy surgeon-general, on being relieved from duty at the medical supply depot at San Francisco, will report for transportation to Manila, P. I., for assignment to duty in the Division of the Philippines.

Eugene H. Hartnett, *lieutenant and asst.-surgeon, leave of absence* extended.

Philip F. Harvey, lieutenant-colonel and deputy surgeon-general, relieved from duty as chief surgeon, Department of California, to proceed to Chicago, for duty as chief surgeon, Department of the Lakes.

Charles L. Heizmann, colonel and assistant surgeon-general, from duty as chief surgeon, Department of the Lakes, to San Francisco, for duty as chief surgeon, Department of California.

Jefferson R. Kean, major and surgeon, having relinquished the unexpired portion of his leave of absence, will report in person to the surgeon-general of the Army for duty in his office.

Reynold M. Kirby-Smith, lieutenant and asst.-surgeon, detailed a member of an examining board at Fort Barancas, Fla., vice Frederick E. Jenkins, contract surgeon, relieved.

Louis M. Maus, lieutenant-colonel and deputy surgeon-general, having reported his arrival in San Francisco, Cal., will assume charge of the medical supply depot in that city, relieving Lieut.-Col. J. D. Hall, deputy surgeon-general.

Walter D. McCaw, major and surgeon, is relieved from duty at Fort Wadsworth, N. Y., and will report in person to the surgeon-general for duty in his office and as a member of the faculty of the *Army Medical School.*

William F. de Niedeman, major and surgeon, Vols., so much of former orders as directed his honorable discharge to take effect Oct. 15, 1902, is amended so as to make it take effect Sept. 11, 1902, he having tendered his resignation. Henry O. Perley, major and surgeon, U. S. A., member of an Army retiring board convened at Jefferson Barracks, Mo.

Edwin W. Rich, lieutenant and asst.-surgeon, now on duty at the General Hospital, San Francisco, will proceed to Honolulu, H. I., *for temporary duty, relieving Colonel Joseph B. Girard, assistant* surgeon-general.

Henry A. Shaw, captain and asst.-surgeon, relieved from further duty in the Division of the Philippines, and will proceed to San Francisco, where on arrival he will report by telegraph to the adjutant-general for orders.

Harry H. Van Kirk, contract surgeon, leave of absence for two months granted, to take effect about Nov. 1, 1902.

Philip G. Wales, captain and asst.-surgeon, will report in person at the Army Medical Museum Building, Washington, D. C., to the president of the examining board for examination to determine his fitness for promotion and thereafter to return to his proper station.

Llewellyn P. Williamson, lieutenant and asst.-surgeon, leave of *absence from the Department of the Missouri* extended fifteen days.

James S. Wilson, captain and asst.-surgeon, from New York City, to Fort Riley, Kan., for temporary duty in connection with the military maneuvers to be held at that station in September and October, 1902, on the completion of which duty he will return to his proper station.

Francis A. Winter, captain and asst.-surgeon, member of a retiring board at Jefferson Barracks, Mo.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Sept. 20:

Medical Director W. G. Farwell, *ordered to* Philadelphia, for duty in connection with recruiting.

Surgeon C. Biddle, detached from Naval Recruiting Station, Philadelphia, and to duty at York, Pa., with recruiting party.

P. A. Surgeon C. D. Brownell, detached from Naval Hospital, Chelsea, Mass., and ordered to the *Panther.*

P. A. Surgeon J. B. Dennis, detached from the *Hartford,* and ordered to the *Brooklyn.*

Asst.-Surgeon R. B. Williams, discharged from treatment at Naval Hospital, Newport, R. I., and *ordered to the U. S. T. B. Decatur.*

Asst.-Surgeon J. H. Payne, detached from the *Brooklyn,* and ordered to Naval Hospital, Newport, R. I.

Asst.-Surgeon F. M. Munson, detached from duty on the *Decatur* and ordered to the Naval Hospital, Washington, D. C.

Asst.-Surgeon R. E. Hoyt, detached from Naval Hospital, Newport, R. I. and ordered to the Naval Academy.

Surgeon J. W. Ross, retired, detached from the Navy Yard, Pensacola, Fla., and ordered to the Museum of Hygiene and Medical School, Washington, D. C.

Asst.-Surgeon J. H. Iden, detached from the *Lancaster,* and ordered to the *Topeka.*

Surgeon J. E. Gardner, ordered to the Yokohama Hospital.

Pharmacist R. Waggener, detached from Naval Station, Key West, Fla., and ordered to the Navy Yard, Pensacola, Fla.

Surgeon A. M. D. McCormick, detached from the Naval Academy, Annapolis, Md., September 20, and ordered to the *Hartford.*

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Sept. 18, 1902:

Surgeon A. H. Glennan, granted leave of absence for six days from Sept. 15, 1902.

P. A. Surgeon C. N. Gardner, granted *leave of absence for* one day, Sept. 18, 1902.

P. A. Surgeon John McMullen, relieved from duty in office of Consul-General of the United States at London, England, and directed to proceed to Hong Kong, China, as inspector for a period of two weeks; then to assume command of service at that port, relieving Asst.-Surgeon J. W. Kerr.

P. A. Surgeon A. R. Thomas, directed to proceed to San Francisco, and report to medical officer in command for duty and assignment to quarters.

Asst Surgeon Carl Ramus, granted leave of absence for one month from Sept. 25, 1902.

Asst.-Surgeon Carroll Fox, granted leave of absence for seven days from Sept. 15, 1902.

Asst.-Surgeon Carroll Fox, relieved *from duty* in the office of United States Consul at Liverpool, England, and directed to proceed to Manila, P. I., and report to the chief quarantine officer for duty.

Asst.-Surgeon C. W. Vogel, relieved from duty at Dutch Harbor, Alaska, to take effect upon departure from that port of last revenue cutter, and directed to proceed to San Francisco, and report to the medical officer in command for duty and assignment to quarters.

A. A. Surgeon L. C. Bean, granted leave of absence for one day, Sept. 14, 1902.

A. A. Surgeon F. H. *Cleaves, granted leave of absence* for fourteen days from Sept. 9, 1902.

Pharmacist G. C. Allen, to report to medical officer in command at Baltimore, for temporary duty during the absence on leave of Pharmacist E. B. Scott.

Pharmacist M. R. Mason, relieved from duty at Dutch Harbor, Alaska, on closing of station, and directed to proceed to San Francisco, and report to the medical officer in command for duty and assignment to quarters.

BOARD CONVENED.

Board convened at the U. S. Marine-Hospital, Chelsea, Mass., Sept. 23, 1902, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon L. M. Woodward, chairman; Asst.-Surgeon W. K. Ward, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 19, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 31-Sept. 7, 4 cases.

Colorado: Denver, Aug. 30-Sept. 6, 2 cases.

District of Columbia: Washington, Sept. 17, 2 cases.

Florida: Escambia County, Pensacola included, Sept. 6-13, 3 cases.

Illinois: Chicago, Sept. 6-13, 1 case.

Kansas: Wichita, Aug. 24-31, 1 case.

Kentucky: Covington, Aug. 30-Sept. 6, 6 cases.

Massachusetts: Boston, Sept. 6-13, 7 cases, 3 deaths; Chelsea, Sept. 6-13, 1 case; Fitchburg, Aug. 30-Sept. 6, 1 case.

Missouri: St. Joseph, Sept. 6-13, 1 case.

New Jersey: Newark, Sept. 6-13, 3 cases, 1 death; Passaic, Aug. 30-Sept. 13, 2 cases.

New York: New York, Sept. 6-13, 6 cases, 3 deaths.

Ohio: Cincinnati, Sept. 5-12, 3 cases; Cleveland, Sept. 6-13, 84 cases, 16 deaths; Hamilton, Sept. 6-13, 1 case.

Pennsylvania: Altoona, Sept. 6-13, 1 case; Johnstown, Sept. 6-13, 9 cases, 1 death; McKeesport, Sept. 6-13, 16 cases; Philadelphia, Sept. 6-13, 6 cases; Pittsburg, Sept. 6-13, 25 cases, 1 death; Reading, Sept. 8-15, 5 cases.

South Carolina: Charleston, Sept. 6-13, 3 cases.

Tennessee: Memphis, Sept. 6-13, 1 case.

Wisconsin: Milwaukee, Sept. 6-13, 1 case.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, Aug. 1-15, 11 deaths.

Ecuador: Guayaquil, Aug. 23-30, 3 deaths.

France: Paris, Aug. 16-23, 1 death.

Gibraltar: Aug. 24-31, 1 case.

Great Britain: Aug. 23-30, Liverpool, 14 cases; London, 11 cases 2 deaths.

India: Bombay, Aug. 13-19, 4 deaths; Calcutta, Aug. 9-16, 2 deaths.

Russia: Moscow, Aug. 16-23, 2 cases, 1 death; Odessa, Aug. 24-31, 4 cases; St. Petersburg, Aug. 16-23, 12 cases, 1 death.

Spain: Barcelona, Aug. 16-30, 4 deaths.

YELLOW FEVER.

Colombia: Panama, Sept. 1-8, 4 cases, 1 death, among soldiers.

Ecuador: Guayaquil, Aug. 16-23, 1 death.

Mexico: Coatzacoalcos, Aug. 30-Sept. 6, 4 cases; Orizaba, Sept. 7, epidemic; Progreso, Sept. 12, 1 case; Vera Cruz, Aug. 30-Sept. 13, 45 cases, 7 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, July 12-19, 250 cases, 189 deaths; Provinces, to July 19, 15,555 cases, 11,691 deaths.

CHOLERA—FOREIGN.

China: Amoy, July 27-Aug. 2, 40 cases estimated; Hongkong, Aug. 2-9, 6 cases, 6 deaths; New Chwang, July 19-Aug. 2, 175 cases, 145 deaths.

Egypt: Alexandria, Aug. 5-27, 17 cases, 12 deaths; Cairo, July 22-Aug. 27, 913 cases, 816 deaths.

India: Bombay, Aug. 13-19, 1 death; Calcutta, Aug. 9-16, 4 deaths.

Japan: To Aug. 18, Ehime Ken, 39 cases; Formosa, 213 cases, 133 deaths; Fukuoka Ken, 671 cases, 372 deaths; Hioga Ken, 12 cases, 6 deaths; Hiroshima Ken, 2 cases; Kagawa Ken, 606 cases; Humamota Ken, 11 cases, 4 deaths; Kyoto Ken, 14 cases, 2 deaths; Nagasaki Ken, 90 cases, 31 deaths; Oita Ken, 12 cases, 4 deaths; Okayama Ken, 1,268 cases, 783 deaths; Osaka Ken, 96 cases, 5 deaths; Saga Ken, 88 cases, 53 deaths; Shimana Ken, 5 cases; Tokushima Ken, 1 case; Tokyo Ken, 5 cases, 4 deaths; Wakayama Ken, 1 case; Yamaguchi Ken, 90 cases, 1 death.

Java: Batavia, July 27-Aug. 2, 32 cases, 25 deaths.

Russia: Chabarowsk, July 28-Aug. 7, *11 cases,* 8 deaths; Olowjannaja, to Aug. 8, 8 cases, 5 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Aug. 31-Sept. 7, 3 deaths, Chinese.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 2-9, 34 deaths.

India: Bombay, Aug. 13-19, 35 deaths; Calcutta, Aug. 9-16, 9 deaths.

Japan: Yokohama, Aug. 9-16, 16 cases, 4 deaths.

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Original Articles.

THE DIAGNOSIS OF CHRONIC INDURATIVE OR INTERSTITIAL NEPHRITIS.*

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Discussing so trite a subject as the diagnosis of chronic indurative or interstitial nephritis, one can scarcely do more than emphasize the importance of certain pathologic and clinical features of the disease—features that have significant diagnostic, prognostic and therapeutic bearings. It is impossible to add anything new to our knowledge of the subject. Indeed, as a matter of fact, we at this day are scarcely better informed on the subject than was Bright himself. It is true that Aetius (died 367 A. D.), Avicenna (980-1036), and Van Helmont (1577-1644) attributed certain cases of dropsy to disease of the kidneys, and that Cotunnius (1736-1822), in 1770, discovered that the urine of dropsical patients is coagulable by heating, but our first insight into the true nature of the nonsuppurative diseases of the kidneys was furnished by Richard Bright (1789-1858) in his memorable publications in 1827 and subsequently. It is also true that Wells (1757-1817), in 1806, Blackall (1771-1860), in 1813, and Alison (1790-1859), in 1820, anticipated somewhat the observations of Bright, but the reports of these writers were fragmentary and their reasoning in large part erroneous. Bright, however, recognized the dependence of the symptoms, dropsy and albuminuria, on the lesions in the kidneys, which he described accurately; further, he recognized that although albuminuria and dropsy are the characteristic symptoms of certain diseases of the kidneys, in some cases the amount of albumin may be small and the dropsy slight or altogether absent, and he described many of the associated phenomena, such as uremia and the cardiovascular changes, and many of the complications, such as blindness, apoplexy, inflammation of the serous membranes, etc. Indeed, to those interested in the subject the original papers of Bright are a constant source of delight.

In view of the dependence of the diagnosis of chronic indurative or interstitial nephritis on changes in the urine and in the cardiovascular apparatus, preliminary reference may be made to the differential diagnosis of albuminuria, especially to the disorders associated with slight amounts of albumin in the urine, and to the cardio-vascular alterations.

THE DIFFERENTIAL DIAGNOSIS OF ALBUMINURIA.

Albuminuria is a term used to denote the presence in the urine of different proteid substances—serum albumin, serum globulin, nucleo-albumin, albumose, peptone, fibrin and hemoglobin. Formerly regarded as diagnostic of Bright's disease, it is now generally known that albuminuria may be due to a wide variety of diseased conditions. We know, however, that large amounts of albumin in the urine almost always indicate serious kidney disease, but that, on the contrary, serious disease of the kidneys may exist for a long time with little or no albumin in the urine. In the great majority of cases of albuminuria the albumin is moderate in amount, and one generally has to determine whether the albumin is due to disease of the kidneys, to disease of some other organ, or to both. The importance and significance of albuminuria are always much enhanced by the associated presence of casts, but still we have to bear in mind that both albumin and casts may be present without serious disease of the kidneys, and that serious forms of Bright's disease may exist without either albumin or casts in the urine. The differential diagnosis of albuminuria, therefore, is of considerable importance. For purposes of study we may distinguish the following forms of albuminuria: 1, Extrarenal, spurious, accidental or factitious albuminuria; 2, so-called functional, physiologic or cyclic albuminuria; 3, albuminuria without noteworthy alterations in the kidneys, and 4, albuminuria with noteworthy alterations in the kidneys.

EXTRARENAL, SPURIOUS, ACCIDENTAL OR FACTITIOUS ALBUMINURIA.

These are the cases in which the albuminuria is but a subsidiary factor and entirely dependent on the admixture with the urine of different albuminous fluids—blood, pus, chyle and seminal discharges. Chyle is a very rare constituent of the urine, and when present will scarcely fail of recognition. Seminal discharges in the urine are of more common occurrence; the variest tyro will scarcely fail to detect them. The greatest interest attaches to the cases of albuminuria associated with blood and pus in the urine—the result of inflammation and ulceration of, and of hemorrhage from, any part of the genito-urinary tract. In these cases the amount of albumin is small—not more 1/10 by bulk (after the heat and acid test), and it is proportionate to the amount of blood and pus. A disproportionate amount of albumin should always excite a suspicion of the coexistence of nephritis. The presence of casts in the urinary sediment is of the greatest importance—their persistence being clear evidence of nephritis, and indicating that at least a part of the albumin in the urine is due to circulatory and tissue alterations in the kidneys. One must avoid error in presuming the non-existence of nephritis in cases in which a small amount of albumin and casts are associated with a few leucocytes or pus corpuscles. In most of these cases the albuminuria is due in great part to nephritis—a few leucocytes or pus corpuscles being regular constituents of the urine in Bright's disease. The means of determining the situation and nature of the lesion causing the pus and blood in cases of spurious albuminuria scarcely falls within the scope of this communication.

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SO-CALLED FUNCTIONAL, PHYSIOLOGIC, CYCLIC, INTERMITTENT, PAROXYSMAL, DIETETIC, POSTURAL AND ADOLESCENT ALBUMINURIA.

The occurrence of a "physiologic" albuminuria is now generally conceded. It is found especially in young subjects, especially in male subjects under 25 years of age. It is usually detected accidentally, as, for instance, at examinations for life insurance, or for other certificates of health. In some cases it appears to be constant and it lasts for a relatively long time; in other cases it is intermittent—occurring at stated or indeterminate periods. In many of the cases the presence and the amount of the albumin are much influenced by certain circumstances—posture (whence it is sometimes absent on arising in the morning and present later in the day), exercise, emotional and other excitement, cold baths, certain articles of diet (especially proteids, but also large amounts of ordinary mixed foods), prolonged anxiety, college and university examinations, etc. In diagnosing this form of albuminuria considerable circumspection must be exercised. The patient should be a young subject; the urine should be normal in amount (certainly not increased), normal in color, and normal in specific gravity (certainly not of lessened specific gravity); the amount of albumin must be small—never more than 0.1 per cent.; the urine must contain no other abnormal constituent; there must be no local disease of the genito-urinary tract, such as gleet, spermatorrhea, leucorrhea, etc., that might give rise to spurious albuminuria; every bodily organ must be examined and found to be in perfect health—in particular there must be no hypertrophy of the left ventricle of the heart, no accentuation of the aortic second sound, and no increased arterial tension; nor may there be any evidence of disorder of the heart, lungs or liver that might occasion congestion of the kidneys; there must have been no past, nor may there be any present, edema, uremic manifestations or retinal changes; and at the most there must not be more than an occasional hyaline cast. Even in cases that meet these requirements, much caution must be observed, and the diagnosis must not be made until the patient has been long under observation, until both the morning and the evening urines have been repeatedly examined, and until the albumin is found to vary with the influences under which it develops. And when the diagnosis has been made one should stand willing to renounce it immediately on the development of signs of disease likely to be attended by albuminuria. Caution is always necessary inasmuch as albumin may be temporarily absent even for long periods in certain cases and at certain stages of chronic indurative (or interstitial) nephritis, whereas, in other cases it may be present in such small amounts as to require delicate tests for its detection. More than a small amount of albumin always suggests a latent nephritis that for the time being may reveal itself by no sign other than the albuminuria. The caution necessary in the diagnosis of these cases is evident from the statement of Senator, who believes that most cases of so-called cyclic or functional albuminuria are really cases of latent nephritis, and that no case of albuminuria may be regarded as functional or physiologic if the albumin exceeds 0.4 or 0.5 parts in 1,000. The diagnosis of functional albuminuria in late adult life had best be dispensed with entirely, as practically without exception small amounts of albumin in the urine of such subjects means chronic nephritis (excluding cases of extrarenal albuminuria).

The cause of this functional or cyclic albuminuria is not well understood. It has been attributed to vascular alterations (congestion) of the kidneys, and to disturbances in metabolism, in consequence of which albumoses, excessive in quantity or abnormal in quality, are formed. That many of these cases are really cases of physiologic albuminuria may well be doubted. Some of them are certainly cases of spurious albuminuria. In most cases it is likely that the glomerular epithelium suffers some nutritional disturbance; that it is the seat of at least slight irritation in some cases may be inferred from the associated presence of oxalates in considerable numbers. In some cases the renal epithelium is probably unduly sensitive. Inasmuch, however, as most cases recover entirely after a time, the kidney alterations—still within the range of the normal—are more or less persistent; in other cases they are intermittent or paroxysmal. These cases may be confounded with the rather unusual cases in which following an acute nephritis in early childhood a trace of albumin persists throughout life, but the patient lives to a good old age without other manifestations of nephritis developing. Such persistent albuminuria, of course, indicates slight alterations in the renal epithelium, and in case careful inquiry is not made into the antecedent history of the patient, the condition may be regarded as "physiologic" albuminuria.

ALBUMINURIA WITHOUT NOTEWORTHY ALTERATIONS IN THE KIDNEYS.

A slight amount of albumin may be found in the urine in a great variety of morbid conditions without noteworthy alterations in the kidneys. Thus it may be found in different blood conditions, such as the anemias, leukemia, purpura, scurvy, etc.; in certain forms of intoxication, such as lead poisoning, mercurial poisoning, etc.; in conditions associated with the presence of substances such as sugar and bile-pigments in the blood; after the administration of anesthetics; in fever conditions, and in certain nervous disorders—epilepsy, apoplexy, meningitis, tetanus, exophthalmic goiter, injuries to the head, etc. In most of these cases the albuminuria is attributable to nutritional disturbances in the glomeruli and renal epithelium induced by defective blood supply; in some cases the result of nervous influences. The true nature of these cases is usually readily recognized. The albuminuria is slight and temporary, as a rule; the primary disorder is sufficiently obvious, and there is no other manifestation of Bright's disease. It is important, however, to point out that the conditions in the kidneys found in some of the intoxications and in fever states merge gradually into the well-defined lesions of nephritis—that there is no sharp dividing line between them.

ALBUMINURIA WITH NOTEWORTHY ALTERATIONS IN THE KIDNEYS.

In this group are included the cases of active and passive congestion of the kidneys, cases of toxic degeneration of the kidneys (most of the cases of febrile albuminuria), the kidney of pregnancy, amyloid degeneration of the kidney, the acute and chronic suppurative and non-suppurative inflammations of the kidneys, and the tumors of the kidneys. In all of these cases the albuminuria is due to some more or less severe temporary or permanent damage to the kidneys, and the albuminuria acquires its clinical significance and diagnostic importance from the attendant phenomena. In acute congestion of the kidneys the albumin is small in amount, the urine is decreased in quantity and frequently more or less hemorrhagic, and the causative factor usually can be determined. In most cases, however, acute congestion of the kidneys represents but the early stage of acute nephritis from which it is scarcely to be differentiated. *In chronic congestion the albumin varies in* amount in different cases. In chronic heart and lung diseases it is usually small in amount, but in cases of chronic congestion due to obstruction of the renal veins by a tumor or ascites, etc., the amount may be large. The diagnosis of chronic congestion is to be based on the attendant phenomena and not on the amount of albumin. Toxic or febrile albuminuria is an interesting condition that merits much attention. The albumin in these cases is due to the direct action of some toxin on the renal epithelium rather than to the fever, though this may be a contributing factor; in the one case the toxin induces marked degeneration of the renal epithelium, in another case it leads to severer lesions—to an acute nephritis. In toxic albuminuria the albumin is slight or moderate in amount and transitory, disappearing with the intoxication or infection that gives rise to it. A detailed discussion of the albuminuria of the different forms of Bright's disease scarcely falls within the scope of this communication.

THE CARDIOVASCULAR CHANGES IN CHRONIC NEPHRITIS.

These changes are of extreme interest and importance; as a matter of fact, they dominate the clinical picture of the disease and they assume commanding position in the prognosis and in the treatment. The lesions are widespread, involving the heart, the large and the smaller arteries, the capillaries, sometimes even the veins. The lesions of the heart in chronic indurative nephritis involve the muscle and find their expression in hypertrophy. With this, at times, there is associated some interstitial myocarditis with increase of the intermuscular fibrous trabeculæ, especially in the neighborhood of many of the smaller coronary arteries which frequently are obliterated. In some cases, especially late in the course of the disease, fatty degeneration of the heart muscle also may supervene. Valvular lesions are extremely uncommon. Those that are found in cases of renal disease are either an antecedent condition, or they result from mechanical causes, from dilatation of the cavities of the heart. The lesion in these cases is one of relative insufficiency—the valve leaflets, in themselves normal, being incapable of closing the abnormally enlarged orifices. The hypertrophy of the heart is predominately a lesion of the left ventricle. In the majority of cases the left ventricle alone is affected; in the remainder of the cases both ventricles are affected. The right ventricle is never affected alone. Simple hypertrophy *of the left ventricle is the first event; later this* is associated with some dilatation—eccentric hypertrophy. The longer the nephritis continues (the longer the patient lives) the more certain the development of consecutive enlargement of the right ventricle the increased pressure in the left ventricle coupled with degenerative alterations in the heart muscle. leading to increased pressure in the right ventricle. Here also the hypertrophy is of the eccentric variety. Predominating dilatation of either or both ventricles is an unusual event until toward the termination of life; its development is of ominous moment—it usually presages an early fatal termination. It has been stated by Senator and others that the hypertrophy of the primarily contracted kidney is of the simple variety, whereas that associated with the secondarily contracted kidney and with the anteriosclerotic kidney is of the eccentric variety—hypertrophy with dilatation. But this statement scarcely permits of general application.

This hypertrophy of the heart occurs in all forms of *nephritis, but not in all cases. In none of the varieties,* however, does it so dominate the clinical picture as it does in chronic indurative or interstitial nephritis. It may be expected from the time of the contraction or atrophy of the kidney, be it of the primary or the secondary variety. Thus it occurs early in the primary form, but its occurrence may be (but usually is not) much delayed in the secondary form. It may, however, occur in chronic diffuse non-indurative (or parenchymatous) nephritis, and it is observed in some cases of acute nephritis, particularly in some of the cases of acute nephritis following the infections. In some of the chronic cases in which it should be expected, for some more or less inexplicable reason it may not occur. These, however, are the unusual cases. The absence of the hypertrophy may be due to faulty nutrition—the heart not being sufficiently well nourished to enable it to hypertrophy; to sclerosis of the coronary arteries; to the vicarious action of one of the other emunctories removing those excrementitious products ordinarily eliminated by the healthy kidneys, etc.

The changes in the arteries are more complex than are those in the heart, and the exact mode of their causation is still debated. In many cases the larger arteries show a loss of elasticity, in other cases more or less arteriosclerosis and atheroma; but neither the one nor the other is a constant feature. The medium-sized and the smaller arteries almost invariably have thickened walls—the lesions being conspicuous in the middle and in the innermost coats. Presumably the first alteration consists of a hyperplasia of the muscular coat—an alteration effected in response to increased functional demands, the result of an effort on the part of the arteries to control the circulation. After a while, or in some cases possibly from the beginning of the disease, fibroid or hyaline degeneration supervenes. In some cases both the muscular hypertrophy and the fibroid alteration may be observed side by side. The changes in the innermost coat consists especially of thickening of the subendothelial layer. and in many cases of some thickening also of the endothelium itself. In the early stages of the disease the arterial lumen is diminished from contraction of the muscular coat. Later, on account of the increased arterial pressure, the overaction of the heart and degeneration of the walls of the arteries, the result of defective nutritive supply, in part, at least, attributable to obstruction or compression of the vasa vasorum, the arterial lumen becomes increased. The increase, however, is in part counteracted by the thickening of the endothelium. The changes in the arteries though widespread are not distributed uniformly throughout the body. In many cases they are most marked in the kidneys; in a few cases they appear to be almost confined to them. A noteworthy arterial condition consists of the development of miliary aneurisms that in many cases are numerous and implicate especially the arteries of the brain, and rupture of which frequently leads to the fatal termination.

The cause of these cardiovascular alterations has not been thoroughly worked out. Considerable discussion still obtains with reference to whether the primary alterations are in the arterioles (stop-cock action of Johnson), or in the capillaries (the arteriocapillary fibrosis of Gull and Sutton). Doubtless the conditions differ in different cases. Thus arteriosclerosis itself may be the primary event(and this seems to be especially common in this country), and it leads to both the kidney alterations and the cardiac hypertrophy. In this instance the disease is a widespread process, and its etiology is the etiology of arteriosclerosis. However, in many cases the nephritis is the primary event and leads to the cardiovascular alterations. What seems to be true is that the cardiovascular alterations result from obstruction to the flow of the blood in the arterioles and capillaries throughout the body, and that this obstruction is provoked by the presence in the circulating blood of some irritative metabolic product or products that should be, and in health are, eliminated by the kidneys. The nature of this poisonous metabolic product, whether there be one or several poisons, and whether the same poison or poisons are operative in all cases has not yet been determined. Whether the poison or poisons exert their action on the circulation through the vasomotor system —irritation provoking contraction of the arterioles, or whether they exert a direct action on the vessels obstructing the flow of blood through them entirely independently of the nervous system, is still debated. The question is further complicated by the adherence of certain writers to the mechanical theory first proposed by Traube, later elaborated by Cohnheim, and modified by Tyson, who looks on the cardiovascular changes as compensatory in nature and set up with a view to supplement the gradual loss of renal substance. For the time being, as clinicians, therefore, we have to content ourselves with recognizing the clinical manifestations, and appreciating the importance of these cardiovascular alterations. I have already had occasion to mention these in detail.[1]

SYMPTOMS OF CHRONIC INTERSTITIAL NEPHRITIS.

The first clinical manifestations of chronic interstitial nephritis differ materially in different cases. For the present, leaving out of consideration that form of chronic indurative nephritis that develops late in the course of the large white kidney, and which in many cases is scarcely to be distinguished from the large white kidney, it may be said that the early stages of chronic indurative (or interstitial) nephritis—the red granular kidney, usually escape detection, or they are discovered accidentally by the routine examination of the urine of patients ill with other diseases, or in examining applicants for life insurance or for other certificates of health. When, finally, after a number of years the disease does produce obstrusive symptoms, these are usually of such a nature that they are likely, for a time at least, to be attributed to disease of some organ other than the kidneys. Thus, while the patient may present himself to his physician with the idea that he is suffering with diabetes on account of the large amount of urine that he voids, he is just as likely to complain of dimness of vision, the consequence of albuminuria neuroretinitis, or of one of the many manifestations of chronic uremia, such as dyspnea, asthma, gastrointestinal derangements (gastric catarrh, gastric hemorrhage, diarrhea), or headache, hemicrania, tinnitus aurium, or vertigo, etc., or neurasthenia, pains in the muscles or joints, or eczema, of palpitation of the heart and precordial distress; or, the patient, in apparent good health, may suddenly develop a severe and even fatal attack of cardiac failure, pass into uremic coma or convulsions, or he may suffer an apoplexy and die.

DIAGNOSIS.

Revealing itself thus in different ways, the diagnosis of chronic interstitial nephritis depends on the results of an examination of the urine and of the cardiovascular apparatus. The characteristics of the urine are too well known to need detailed mention. Suffice it to say that the urine is increased in amount, of low specific gravity. Especial interest and importance attaches to the albuminuria. The amount of albumin is usually slight; often there is no more than a trace; at times none may be found. *Importance attaches to the absence of albumin* in many cases. The albumin may be absent for days or weeks at a time; it may be absent for the early morning urine and present in that passed later in the day; and it may be present only after exercise, emotional and other excitement, or after eating, especially after eating proteids. In this respect it resembles the so-called functional or cyclic or dietetic albuminuria, and especial care must be exercised in the differential diagnosis, as already pointed out. The urinary sediment usually contains a few hyaline casts, rarely a few epithelial and granular casts. Frequently the casts are very narrow.

In view of the oftentimes slight evidence of renal disease on the part of the urine the cardiovascular lesions assume considerable, even dominant, importance. The clinical evidence of the cardiovascular lesions consists of hypertrophy of the heart, especially of the left ventricle, accentuation of the aortic second sound, and of increased arterial tension. The signs of the cardiac hypertrophy are sometimes obscured by coexisting emphysema of the lungs, but usually one may make out displacement downward and outward of the apex, increased force and vigor of the apex beat, which though usually slightly broader than normally is still well circumscribed, and the percussion evidences of enlargement of the left ventricle. Concurrently with increase in the muscular volume of the heart the first sound becomes more prolonged, duller and lower pitched than in health. The second aortic sound becomes markedly accentuated—a very important sign, and a sign that frequently may be made out when enlargement of the heart is as yet problematic. The changes in the pulse are of great diagnostic value. In the early stages of the disease, the arteries being contracted, the pulse is small; the internal pressure being increased, the artery resists compression and flattening; on account of the increased internal pressure and the contraction of the vessels, the pulse waves are small. The pulse, therefore, is hard and resisting to the palpating fingers, the pulse waves are small, the artery remains persistently full between beats (and this is the characteristic feature), and considerable pressure is required to obliterate the pulse wave. Later to these there is added the evidence of arteriosclerosis, and later still the more characteristic changes of atheroma. As I have said elsewhere,[2] the existence of these cardiovascular changes, as also of the kidney lesions, may for a long time remain entirely unknown to the patient and be entirely unsuspected by the physician. So long as the heart continues to perform its increased work well no symptoms occur. Should, however, the increased quantity of the urine or the development of slight swelling about the eyes or the ankles attract the patient's attention, or should he suffer from epistaxis (usually of serious moment), or from dimness of vision (due to neuroretinitis), or from severe muscular cramps in the calves of the legs (which are quite common), or from any of the symptoms of chronic uremia, inquiry on the part of the physician may elicit the information that for months, possibly years, excitement and exertion have been provocative of breathlessness and palpitation of the heart, but having an obvious cause they were regarded as of no particular significance. As the disease advances, however, the nutrition of the heart no longer keeps pace with its enlargement, degenerations ensue, and evidences of embarrassed circulation result. It is now *that symptoms referable to the cardiovascular system* dominate the clinical picture. To the hypertrophy of the heart, if it were simple, there supervenes dilatation, and to disease of the left ventricle is added disease of the right. There result cardiac asthma, congestion and edema of the lungs, bronchitis, gastrointestinal disturbances, generalized edema and effusions within the serous cavities and alterations in the urine. The urine lessens considerably in amount, and it becomes of high color and increased specific gravity; albumin increases in amount and casts become more numerous, and dark granular, epithelial, and even blood casts and free erythrocytes may be encountered. The symptoms referable to the heart and lungs, at first transitory and nocturnal, become permanent, the other symptoms mentioned are added, and if relief is not afforded, death ensues with cardiac failure or uremia or both dominating the final scene. Toward the end of life concurrently with the cardiac failure, the pulse which had been of high tension may become of lessened tension; the second aortic sound becomes less accentuated; with embarrassment of the right heart the second pulmonary sound becomes accentuated; signs of dilatation, and galop rhythm, always of serious moment, supervene.

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[1] The Interrelationship Between Cardiovascular Disease and Renal Disease, Philadelphia Medical Journal, Oct. 27, 1900. Diseases of the Kidneys, Nephritis, Bright's Disease, Wood's Reference Handbook of the Medical Sciences, revised edition, vol. v, 1902.

[2] What follows is a reiteration of what the author has already said in the Philadelphia Medical Journal and in Wood's Reference Handbook of the Medical Sciences, l. c., which may be consulted for a fuller discussion of the questions concerned.

So long as cardiac compensation is maintained the diagnosis of chronic indurative or interstitial nephritis is evident from the results of an inquiry into the antecedents of the patient, the special etiologic factors in the case, the different clinical manifestations, and an examination of the urine and of the cardiovascular apparatus. Indeed, a diagnosis based on increased arterial tension, accentuated second aortic sound and the physical signs of hypertrophy of the left ventricle will rarely be wrong. The diagnostic importance of these cardiovascular alterations can not be overestimated. They are among the earliest clinical manifestations of the disease, and they may be detected even in the absence of positive signs of kidney disease in the urine. Such is their double import that, in the event of suspicion of chronic indurative nephritis, they should be diligently sought, and in the event of their accidental detection in the course of the routine examination of a patient, the presence of an unsuspected or latent chronic indurative nephritis must be persistently borne in mind until these cardiovascular signs are otherwise adequately accounted for.

When, however, failure of cardiac compensation occurs, diagnostic difficulties arise. The clinical picture in these cases much *resembles that of an affection primarily* cardiac and secondarily renal. Given a patient with evident lack of cardiac compensation, with signs of hypertrophy and dilatation of the heart, but with such dilatation that it may be well-nigh impossible to determine accurately which side of the organ is especially involved; with or without murmurs; with albumin and casts in his urine—does he suffer from a condition primarily cardiac and secondarily renal, or vice versa? Is the affection one of a primary heart lesion with secondary congestion or cyanotic induration of the kidneys, or is it one of a primary kidney lesion with secondary hypertrophy and dilatation of the heart? The question is extremely difficult to settle offhand in many cases. The presence or absence of murmurs is not definitely diagnostic unless it is possible to accurately localize them and refer them to positive valvular defects. We bear in mind that if there be marked cardiac debility, a murmur of some valvular defect may be temporarily absent; on the other hand, in chronic indurative nephritis, if the cardiac dilatation be sufficient a relative mitral insufficiency may arise and a murmur not present *previously becomes audible. Thus murmurs complicate the* situation. However, a diastolic murmur is usually suggestive of valvular disease, since the murmurs of dilatation and consequent relative valvular incompetency are systolic. In the majority of cases the diagnosis can be made by bearing in mind that in congestion of the kidneys the casts are usually hyaline only, and that the amount of albumin, which may be considerable, varies from time to time with the state of the heart—increasing or decreasing with impairment or improvement in the cardiac activity. Again, in renal congestion we endeavor to ascertain the cause by reference to the past history of the patient and by noting that the kidney lesion is but part of a general condition that finds its expression also in congestion of the liver and spleen, effusions within the serous cavities, anasarca, etc. If, however, the urine remains albuminous despite the subsidence of signs of congestion in other parts of the body; if the specific gravity of the urine lessens, and if in addition to hyaline even a few epithelial casts are discovered, possibly also some erythrocytes, it is evident that in addition to the congestion of the kidneys there exists a nephritis. Whether or not this is a condition of long standing or the final result of long-continued congestion remains to be decided by reference to the past history of the patient. It is in these cases that the therapeutic test is of the greatest diagnostic value. It is in these cases that digitalis is urgently indicated. If, as sometimes happens, the exhibition of digitalis is followed by marked improvement in the condition of the patient, with final absence of casts and albumin from the urine, the condition is definitely determined to have been one of renal congestion. If, however, with improvement in the cardiac condition, albumin and casts do not disappear from the urine, we are then confident of the existence of nephritis—a conviction that may be confirmed by an examination of the cardiovascular apparatus now that compensation has been restored.

In many cases eye manifestations are of great diagnostic importance. Thus the first manifestations of the disease may be edema of the eyelids—especially the lower lids. This may be moderate, sometimes transitory; at times the first, and rarely the only manifestation of the disease for some time. I have known it to develop and persist for seven years before any albumin or casts could be detected in the urine and before any certain evidences of cardiovascular alterations could be elicited. *Especial interest, however, attaches to the* albuminuric neuroretinitis and to uremic amaurosis. Albuminuric neuroretinitis occurs most frequently chronic indurative or interstitial nephritis, but also in chronic nonindurative (or parenchymatous) nephritis; it is therefore more common in subjects over 40 years of age, though it has also been observed in children. Though in a few cases unilateral it is usually bilateral. Often the dimness of vision that it occasions may be the first symptom of the disease, though it is not likely that this comes on before the albuminuria. In many cases the vision is but little impaired; in the absence of involvement of the macula lutea, of extensive hemorrhages and of optic neuritis, no complaint may be made. Thus these important and serious lesions may go unsuspected and undetected unless examination of the eyegrounds be undertaken. These retinal changes bear no relationship to the severity of the renal lesions nor to the amount of the albuminuria; in some cases they even appear to improve despite the progress of the kidney lesions, though this is the reverse of the rule. Hemorrhages are common; in other cases retinal effusions and detachment, vascular alterations or a papillitis is to be observed—so that the ophthalmoscopic picture varies considerably in different cases. Though the retinal lesions may be extensive, vision is rarely lost except in cases of what is called uremic amaurosis. This is an extremely interesting condition, the nature of which is not understood. While it may occur independently of uremic convulsions, it usually follows the convulsions. The blindness is sudden in onset, usually complete, short in duration (two or three days), and usually very rapid in recovery. The ophthalmoscopic picture is usually quite normal; in other cases the lesions of neuroretinitis are detected. At times the blindness is not complete; in rare cases hemianopsia has been observed.

In some cases skin symptoms are suggestive, though their nature is frequently overlooked. Thus there may be intolerable itching, formication, numbness of the extremities or urticaria. In the late stages more or less widespread erythematous, or bullous, or desquamative skin lesions may occur.

THE EARLY CIRCULATORY INDICATIONS OF CHRONIC BRIGHT'S DISEASE.[*]

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By chronic Bright's disease we mean that familiar form of degeneration involving the blood vessels, the kidneys and the heart that in its regular course leads to the death of so large a proportion of the human race who have otherwise been healthy and able to enjoy active and useful careers.

PRIMARILY A DISEASE OF THE CIRCULATION.

I have long since ceased to regard this condition as essentially a disease of the kidneys, though in the final catastrophe these organs are more often chiefly at fault. Primarily, it is a disease of the circulation in which the brain and the kidneys, being as it were end-organs, first manifest symptoms.

A case that has been under observation for five years has just ended fatally by the involvement of the circulation of the brain, producing progressive stupor and finally coma, paralysis and death. The kidneys at the time of death were apparently in good enough order to have maintained life for a long time. In this case the greatest care had been exercised in protecting the kidneys by diet, an even temperature and every other possible means, thus allowing the arterial disease an opportunity for its complete development. The same case, if less carefully guarded, would have progressed by repeated attacks of uremia to a death by the development of anasarca and exhaustion.

So the paradox appears that a person may die from Bright's disease with fairly good kidneys, proving that in this disease the brain and the kidneys are both end-organs, and that in particular cases the brain may suffer more than the kidneys.

KIDNEY SYMPTOMS LATE TO APPEAR.

This point is important in considering the early indications of chronic Bright's disease. The kidneys are insensitive organs, rarely giving rise to pain, intermittent in their action and entirely removed from direct observation. For that reason disorder of the kidneys must have reached a grave stage before it becomes a matter of consciousness. On the other hand, the brain, as the seat of consciousness, is highly sensitive to any intermittance of its functions. It is capable also of examination and observation by the observation of the fundus of the eye which is in close relationship to the brain.

So the brain records at all times in a more or less distinct manner the condition of the circulation and a careful study of the symptom-complex soon reveals which disturbances of the circulation indicate organic disease of the vessels and early Bright's disease. Attention and observation soon make this symptom-complex of extreme significance.

Even in cases in which chronic Bright's disease follows acute nephritis the establishment of the chronic condition is characterized by certain detectable vascular changes. In cases of acute nephritis one watches the circulatory system with anxiety because when changes are established the chance of complete recovery is diminished.

CIRCULATION SYMPTOMS.

There are, of course, disturbances of circulation connected with acute Bright's disease. The heart is temporarily debilitated so that there is often established a blowing systolic murmur at the apex. With the profound anemia and the nervous phenomena that accompany the disease this may lead to functional disturbances of the circulation. These must, however, be distinguished from the changes that take place in the arteries and indicate the transition from subacute nephritis to the chronic general condition. The same change often indicates the establishment of a chronic nephritis in cases of valvular disease of the heart that have been accompanied by prolonged congestion of the kidneys.

The contracted kidney develops gradually and only after a very long time gives symptoms referable to it.

Though we can hardly suppose that cardiac hypertrophy can be established except by some cause acting for a considerable period of time, still it is often the earliest detectable symptom of chronic nephritis. Abnormal arterial tension for the moment may be absent either on account of treatment or some other cause. A physical examination shows distinct cardiac hypertrophy, and we suspect at once the existence of a contracted kidney.

SOME EARLY SYMPTOMS.

A striking point in Bright's disease that first comes to our notice as a circulatory disturbance is the way in which it progresses. Ordinarily, a patient comes under observation, and as the result of treatment the symptoms entirely disappear and he considers himself well. Later, the symptoms return, and this time grow steadily worse, the patient develops languor and weakness, and begins to complain of bad breathing. Ordinarily, the early circulatory disturbances of Bright's disease are not sufficient to cause dropsy.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

It is probable that an increased flow of urine found in early Bright's disease is due as much to increased blood pressure as to any definite change in the kidneys. Loomis speaks of an increased frequency of urination as an early sign of Bright's disease and this again may very well be accounted for by increased secretion due to increased arterial tension.

Nose bleed is another possible result of increased arterial tension, and may, therefore, indicate the beginning of Bright's disease. Another accompaniment of increased arterial tension is headache, due apparently to increased vascular tension in the head.

I would like to class as one of the early circulatory disturbances of chronic Bright's disease certain attacks of indigestion. These are due at this early stage to disturbances of circulation in the stomach, and are not to be confounded with the uremic nausea that comes later.

DIFFICULTIES IN DIAGNOSIS.

Bright's disease more often develops in an atypical than in a typical way, and that even in its final fatal course it may never present the symptoms that one would expect. The earliest symptoms of Bright's disease, and also the latest and fatal symptoms, may be a simple failure of strength as seen in simple degeneration of the kidneys, and as is found in those cases of old people who died apparently from a loss of vitality alone.

So the early symptoms are often an unhealthy look, loss of strength and such disturbances of digestion as may be referred to simple weakness. The urine may not contain albumin except at rare intervals so that it would not be detected by anything but systematic observation. So we must ever be on our guard not to overlook Bright's disease when presenting these symptoms in its very early stages, nor must we fail to recognize the simple degeneration of the kidneys that is fatal to old people.

It is fair to say that the early signs of impending changes of the blood vessels are in type the early circulatory changes of Bright's disease. The first signs of degeneration are manifested by disorder of function. The blood vessels act as tubes to convey the blood to different parts of the body, but at the same time through the muscular structure of their walls they act as regulators of blood pressure. This pressure regulating function is an exceedingly complex one and controls the determination of blood to the different parts of the body as it may be most needed. This regulating function is that which first suffers when the tendency to degeneration begins to show itself so that irregularity of tension is the most important early circulatory indication of chronic Bright's disease.

So we have traced those signs and symptoms in the circulation which precede for a long time the establishment of that condition known as chronic Bright's disease. This pre-nephritis condition attacks chiefly the smaller arteries and these first show disordered function. Arterial tension or a tendency to it causes irregularity of blood pressure and is early recognized by symptoms indicating irregularities of circulation in particular parts of the brain. This irregularity gives rise to temporary unconsciousness, slight paralysis or simply clumsiness of a limb.

In spite of the more scientific nomenclature of disease the term "Bright's disease" still remains a most convenient name for these cardio-vascular nephritic diseases which form so large a part of the clientele of the family physician and the general medical consultant.

It has long been recognized that this disease has its origin often in structures remote from the kidneys. Not infrequently its first signs are found in the blood vessels. In relation to the circulation the brain most early indicates irregularity. Hence it early suffers from deterioration of the blood vessels, and gives the first symptoms of serious change in blood pressure. In advanced Bright's disease we find the brain and the kidneys going hand in hand in the symptomatology of the condition. The brain, on account of its much more highly-organized and delicate structure, often shows the first symptoms of the complex condition called Bright's disease through its early circulatory indications. The management of this condition is best carried out by hygienic measures, but certain drugs are of inestimable value.

54 West 55th Street.

UREMIC APHASIA.[*]

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While the ultimate essence of uremia is unknown, everything points to the conclusion that the condition is a form of autointoxication, in whose production disease of the kidneys plays an important, but perhaps not the only rôle. The poison, like a number of others originating within the body, acts chiefly on the nervous system, although it is probable that no organ or tissue escapes its malign influence, inasmuch as it is conveyed to all parts of the economy by the blood.

VARIETIES OF APHASIA.

In their protean and variable character, the nervous manifestations of uremia are comparable to those of hysteria.[†] Like the latter, they are sometimes so distinctly focal as to suggest the existence of a gross organic cerebral lesion, which the autopsy, however, generally shows to be absent. Among these focal symptoms the most interesting are hemiplegia, monoplegia, monospasm and aphasia. Objectively these four manifestations of uremia are, as a rule, indistinguishable from similar conditions produced by such lesions as hemorrhage, tumor, thrombosis, embolism and softening; but they differ in the important characteristic that at autopsy there is a total absence of any gross morbid lesion that could explain their focal character.

In a previous paper dealing with uremia[‡] I referred to the fact that at the acme of a paralysis or aphasia it may be impossible to tell whether it is due to a gross lesion or is merely a manifestation of uremia. Incidentally, I must add that the existence of uremia does not exclude the possibility of hemorrhage or of embolism; especially not, since individuals suffering from Bright's disease have, for the most part, friable arteries, and not rarely valvular heart lesions.

The difficulties in diagnosis were strikingly brought home to me while I was assistant pathologist to the Philadelphia Hospital. A number of postmortems were made on cases in which the diagnosis had been apoplexy, but in which I found, aside from trivial and irrelevant cerebral lesions, a macroscopically normal brain, while the kidneys were in an advanced stage of disease. On the other hand, cases came to autopsy in which, on account of albuminuria and cylindruria, uremic hemiplegia had been diagnosticated, but in which the autopsy revealed a large hemorrhage.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

[†] Since writing this, I have found, in an article by Chauffard (Arch. gén. de méd., July, 1887, p. 1), the following sentence: "L'uraemie est comme la syphilis et l'hystérie; elle peut tout realiser ou de moins tout simuler."

[‡] Read before the State Medical Society of Pennsylvania, September, 1901.

The occurrence of aphasia as a manifestation of uremia is mentioned by a number of writers on speech defects—among others, by Bateman,[1] Collins[2] and Wyllie,[3] and by authorities on renal diseases, such as Senator[4] and Freitag.[5] It is familiar to neurologists. Wilcox[80] refers to it in his excellent paper on uremic hemiplegia, and it has now a fairly large casuistic literature. The uremic origin of aphasia seems, indeed, to have been recognized before it was appreciated that uremia could produce a paralysis. Monod,[6] for instance, writing in 1868, mentions speech disturbances in discussing uremia, but says that paralysis never occurs.

Uremic aphasia, like the aphasia due to organic lesions, may be associated with right-sided paralysis, either hemiplegic or monoplegic in type, as in the following case:

CASE 26.*—*Summary.*—Male, 42. Several attacks of transient, right-sided hemiplegia, involving also the face and usually, but not always, accompanied by aphasia. Transient paralytic attacks, confined to the face or to the face and arm. Albuminuria, polyuria, thickening of the arteries. Complete recovery from aphasia and paralysis. Several months later general anasarca and death in uremic coma. No autopsy.

The first attack during which I saw this patient came on suddenly and was characterized by a complete right-sided paralysis, involving face, arm and leg, without anesthesia and with preservation of consciousness. Speech was entirely lost. He could understand what was said and could recognize his surroundings. The paralysis of the leg disappeared first, in a few hours; then that of the arm, except in the thumb and index finger, the power in which remained impaired for several weeks. Speech returned by the next day, but the facial paralysis persisted for some time—probably for more than a month.

On the occasion of another visit, Dec. 12, 1901, I found the patient feeling particularly well and sitting up in his chair. While conversing with me cheerfully and rationally, his countenance suddenly became expressionless, the face was drawn to the left, speech became thick and scarcely intelligible, and the right arm paralyzed. Conciousness was preserved, although he was a little dazed. He spoke with difficulty and seemed to have lost all idea of time. He could not give the age of his daughter or her birthday, and could not tell the day of the week or the date. There was no loss of sensation, although touch was felt a little less plainly on the right half of the face than elsewhere. The knee jerks were equal and active; there was no ankle clonus. After about five minutes, the patient all the while remaining sitting in the chair, speech improved and there was some return of power in the hand; but a few moments later he was as bad as before. After another few minutes he felt the power coming back; and when I left the grasp in his hand was stronger and speech was more distinct.

Although the albuminuria persisted, the nervous disturbances eventually disappeared completely, but the patient never grew quite strong. In March of 1902, there was a recrudescence of the uremic phenomena. He had hiccough, lasting for eleven days, and this was followed by vomiting, anorexia, My own case is as follows:†

Aphasia may also occur unaccompanied by any paralysis or any other focal cerebral symptom. Under such circumstances the diagnosis is often extremely difficult, and may never be definitely settled, unless there is an autopsy. Including a case of my own, I have collected from the literature fifteen cases in which aphasia unaccompanied by any motor or sensory paralysis occurred. My own case is as follows:*

CASE 27.—*Summary.*—Female, married, 46, the mother of six children. Has fibroid tumors, but has not suffered much from them. Sudden aphasia and agraphia, preceded by tingling sensations in the fingers and toes. No paralysis; no word blindness or word deafness. Albuminuria; polyuria. Complete recovery.

I saw the patient, Mrs. S., on July 10, 1901, with Dr. H. Kirshbaum. She was married, of more than average intelligence, aged 46 and the mother of six living children. She had been suffering from fibroid tumors for a number of years and had had occasional attacks of vertigo. A few days before I saw her she had complained of tingling in the fingers and toes. On the morning of the 10th, after arising, she endeavored to give some orders to a servant, and was surprised and mortified when the latter laughed at her. On inquiry it was learned that this disrespectful conduct was due to the fact that the patient's speech was so mixed and jumbled that it sounded ridiculous. The lady sent for her physician, who found speech greatly disturbed—an observation that I was able to confirm when I saw her on the evening of the same day. When asked questions—for instance, how she felt, how many children she had, her age, etc.—she tried her best to answer, but could not find the necessary words, and instead, uttered words that, for the most part, were irrelevant or unintelligible. When the answers were given to her she nodded her approval. She was clearly conscious that her speech was meaningless and labored visibly, as if by a synergic effort, to bring forth the proper words. While making such futile efforts she became irritated and excited, and this made speech still worse. She could recognize objects held in front of her, but was unable to name them. When their correct designations were given to her, she repeated them in an intelligent manner. It was quite clear that her ideas were formed properly, but that the power of expressing them by means of speech was impaired. She used a number of words, many of which could not be understood, while others were more or less correctly enunciated, but taken together made only an unintelligible jargon.

A letter was exhibited to her. That she understood its contents was evident from her behavior and from the few words that were properly uttered, but she could not read it aloud connectedly. Voluntary writing was affected in the same way as speech. Asked to write her complaints she tried her best, but succeeded only in putting down a series of meaningless words. She wrote in the Yiddish script, and when the writing was shown to her sister the latter laughed heartily, being much amused by the absurdity of the patient's combination of words. The letters were individually well formed, but the words were grossly misspelled and in their totality meant nothing. Unfortunately, I neglected, at my first visit, to test copying and writing from dictation. The patient was asked to sing the Russian national hymn, and it was found that while she could carry the tune, the words were not correctly enunciated. Her facial play was expressive and her intonation natural. There was no paralysis, either of the face or of the limbs. The tongue was not paralyzed and was protruded straight. The reflexes were normal, and the pupils equal and responsive to light. There was no loss of sensation, no disturbance of vision and no contraction of the visual field on rough testing while the patient was in bed. Temperature, pulse, and respiration were normal. Physical examination revealed nothing save accentuation of the second aortic sound and the presence of fibroid tumors. An examination of the urine, made the next day, showed albumin and a low specific gravity, 1010; there was also polyuria. These facts suggested the diagnosis of uremic aphasia.

July 21, eleven days later, I saw the patient again. She was very well, could write and talk intelligently, and only when speaking fast did she have any trouble in finding the proper words. She could read and write spontaneously and from dictation. Her color was pale and she had lost some flesh. A re-examination of the urine still showed albumin; casts were not present. About two months ago, the patient's husband died in uremic coma; the patient herself is still living.

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* The number refers to list of cases at end of article.

* The case was briefly reported at the meeting of the Pennsylvania State Medical Society, in September, 1901.

We had, then, in this patient, a motor aphasia or paraphasia and agraphia (paragraphia) without disturbance of interior speech. She was able to see and hear and to formulate in her own mind the concepts to which she desired to give expression, but she could not exteriorize her thoughts through the medium of speech and writing. Evidently the pathway between the speech and writing centers—in the foot of the third and second left frontal convolutions, respectively—and the periphery was interrupted. Such a form of aphasia is termed subcortical or infrapictorial motor aphasia (subcortical motor-agraphia).

The existence of a graphic center distinct from the speech center is strenuously denied by Dejerine,[7] but is maintained by Mills,[8] who supports his contention with very cogent reasons. If there is a graphic center, it must be separate from the motor centers of the arm and hand—a view supported by my own case, in which there was agraphia without any paralysis of the arm or hand. The graphic center is placed by Exner,[9] Bernard,[10] Mills and others at the foot of the second left frontal convolution, in close proximity to the motor centers for the right arm and hand.

In the absence of autopsy it is, of course, impossible to make an absolute diagnosis in the present case, and several other possibilities than uremia must be considered, among them hemorrhage and embolism, as well as poisons other than that of uremia. As regards hemorrhage, that is unlikely, since an effusion of blood extensive enough to cause aphasia and agraphia would, in all probability, produce some paralysis; nor would recovery be as prompt in a case of hemorrhage as it was in my patient. An embolus plugging a vessel supplying the speech and writing centers might bring about aphasia and agraphia without causing a paralysis; but there were not, in the patient, the usual sources of emboli. But even in cases of nephritis in which a valvular lesion exists and embolism, therefore, is possible, an aphasia may be uremic, as in the following instance recorded by Rendu:[11]

Case 25.—A man, 56 years of age, was suddenly seized with an apoplectiform attack. On regaining consciousness he was found to be aphasic and to have right brachial monoplegia. As there was a systolic murmur at the base of the heart, a diagnosis of embolism was made. Several days later, however, intense dyspnea and Cheyne-Stokes breathing developed, and the urine became scanty and albuminous. The patient was bled, and the blood was found to contain 0.75 grams of urea per liter. After the venesection, all the symptoms disappeared—the aphasia, the monoplegia and the respiratory symptoms. Rendu concluded—very properly, it seems to me—that the aphasia and monoplegia, as well as the Cheyne-Stokes breathing, were due to the same cause, namely, uremia.

Rotch[12] reports a case quite similar to that of Rendu (see Case 28) in which, owing to the presence of a heart murmur, embolism was diagnosticated; but it is quite probable that the aphasia was uremic.

As for other forms of poisoning, either endogenous or exogenous, there was no evidence whatever of their existence. Migraine sometimes causes focal brain symptoms, but the patient was not a sufferer from this affection.

CHARACTERISTICS OF THE DISEASE.

I have collected from the literature 27 cases of uremic aphasia. These with my two make 29. Fifteen of them were pure aphasias, i. e., unaccompanied by any paralyses. In 14 some form of palsy coexisted. This latter type of cases could, no doubt, be greatly multiplied, as it is very probable that in many instances of uremic hemiplegia there is aphasia which is not recorded in the published histories.

Age.—Children as well as adults are subject to uremic aphasia. According to Dupré[13] the former are more prone to it than the latter. In children it seems to occur especially in post-scarlatinal nephritis. In my table of 29 cases there were: 2 under the age of 10, 2 between 11 and 20, 3 between 21 and 30, 4 between 31 and 40, 8 between 41 and 50, 2 between 51 and 60, 6 between 61 and 70, 1 between 71 and 80, and 1 between 81 and 90.

Sex.—There were 23 males and 6 females.

Mode of Onset.—The onset of uremic aphasia is sudden. There may be no antecedent signs of illness whatever, as in the case cited by Hoppe and the second of my own, or the more common symptoms of nephritis—such as dropsy and visual and cardiac disturbances—may be present in advance. In some instances, uremic symptoms—headache, vomiting and paresthesias—precede the onset of the aphasia. In a few cases the aphasia has followed a convulsion. Several authors refer to the fact that excitement or overwork may bring on an aphasic attack, as it may also predispose to hemiplegia. As hemiplegic attacks have been known to come on during sleep it is probable that aphasia may do likewise; it seemingly did so in my case.

Types of Aphasia.—The majority are motor aphasias of the subcortical type. The patient knows what to say, but can not give expression to his thoughts. Writing may be affected in the same way as speech, as was noted in the cases of Dupré[14] and Lloyd,[15] and in my second case. The degree of aphasia varies: in some there is a total loss of speech, only a word or two—as, for instance, the word "yes"—remaining; in others there is merely a slight disturbance, a few words being lost or misused—a so-called paraphasia, with or without paragraphia. Between these extremes all gradations may be encountered. Sensory forms of aphasia are quite rare, but word deafness (Jocqs' case—No. 16) and word blindness (Lloyd's case—No. 18) have been noted.

Coincident Cerebral Symptoms.—In 14 out of the 29 some form of paralysis—principally right-sided hemiplegia—was a concomitant of the aphasia. Hemiplegia was present in 10 instances; in 2 there was facial paralysis, and in 2 a right brachial monoplegia. Hemiplegia may precede, or, as in Hoppe's case, may follow the development of aphasia. The convulsions are at times unilateral or Jacksonian in type. Hemianopsia has been observed as an occasional accompaniment of aphasia, in association with hemiplegia; amblyopia seems to be more frequent. Hemianesthesia has also been noted (Grenet[16]), but sensory disturbances appear, on the whole, to be rare.

Duration and Course.—The uremic paralysis and aphasia may be so fleeting as to be almost overlooked. In the cases of aphasia culled from the literature I find the one of shortest duration to have been that of Daly (No. 6) which lasted only five minutes. The average duration is probably from twenty-four to forty-eight hours, but the condition may extend over a week or more.

Termination.—If the patient survives the uremic attack he practically always recovers from the aphasia. The nephritic symptoms may persist after the cerebr disturbances have subsided, but, at times, both disappe coincidently and completely. Some of the most b liant results from bleeding have been observed in c facial paralysis. Recovery in five weeks. Later, death from the kidney disease.

Autopsy.—Fatty degeneration of kidneys. Circle of Willis healthy. Softening of the white matter in the vicinity of the third left frontal convolution. Convolution itself not affected.

CASE 16.—Jocqs:[37] Female, 20. Pregnant at term. Eclampsia. Large quantities of albumin in the urine. Labor. Child stillborn. Coma lessening gradually. Urine contains sugar, as well as albumin. Complete recovery, except for a peculiar mental state, patient remembering nothing of what has happened and being word blind. "Je les voyais (des mots), mais je ne les comprenais pas." On leaving the hospital the patient's urine is normal. Disturbance of intellect has not entirely disappeared.

CASE 17.—Lancereaux:[21] Male, 31. Amyloid disease of the kidneys in consequence of general and articular tuberculosis. Several uremic attacks within two years, always preceded by aphasia and agraphia; sometimes aphasia the only uremic manifestation, coming on especially toward evening or after being tired from exercise or any other cause. Diuretic treatment always improved the aphasia.

Autopsy.—Brain presents nothing abnormal.

CASE 18.—Lloyd:[15] Female, 70. Albuminuria and casts. History of asthma and dyspnea; never any paralysis. Arteries atheromatous. After several days' illness almost complete motor aphasia, word blindness and agraphia. Right homonymous hemianopsia; uremic asthma.

Autopsy.—Kidneys contracted; left cystic. Brain normal, macroscopically. Arteries, stiff.

CASE 19.—Mann:[38] Male, 35, with signs of renal disease. Convulsions followed by slowness of speech, obtuseness of intellect and right-sided paralysis. Speech unintelligible and inarticulate, but understands everything.

Autopsy.—Ventricles distended; left three times the size of right. Brain otherwise normal.

CASE 20.—Monod:[6] Female, 9. Scarlet fever, edema, epileptiform convulsions followed by imperfect convulsive movements and partial coma. Disappearance of coma, motor aphasia remaining. The patient has the appearance of one desiring to respond to questions and moves her lips, but is not able to utter any words. Recovery.

CASE 21.—Raymond:[28] Male, 74. Interstitial nephritis; sudden flaccid paralysis of left side without loss of consciousness, sparing the face. Hemianesthesia; complete motor aphasia. Understands what is said, but can not speak. The following day the paralysis is spastic; no return of speech. Death.

Autopsy.—Cerebral edema, atheroma of the circle of Willis; no other brain lesion. Kidneys small and granular.

CASE 22.—Raymond:[28] Male, 62. Interstitial nephritis, loss of consciousness, severe general convulsions, right hemiplegia, ptosis. Intellect slightly obtuse. Understands what is said, but is unable to reply. Death.

Autopsy.—Edema of the membranes and of the brain; brain tissue pale.

CASE 23.—Raymond:[28] Male, 85. Interstitial nephritis, right hemiplegia and anesthesia, aphasia. Death in coma.

Autopsy.—Considerable edema; vessels slightly atheromatous. No gross lesion of the brain.

CASE 24.—Raymond:[28] Female, 46. Interstitial nephritis with acute exacerbation, uremic coma; later, right hemiplegia. A similar attack eighteen months previously; aphasic in both. Understands questions; unable to reply. Complete recovery from aphasia; persistence, in some degree, of right hemiplegia.

CASES 25, 26 and 27 are given in the first part of this article.

CASE 28.—Rotch:[12] Male, 59. Headache for ten years; occasional nausea; no signs of renal disease. Perfectly well at 9 a. m., December 30. At 10 a. m. aphasia; mind clear; headache; numbness of right hand. No paralysis; no sensory disturbance. By evening delirium; answers "yes" to everything; loud souffle over precordia; pulse full, tense, 120; slight fever; albuminuria; casts; scanty urine. Complete recovery by January 12, including disappearance of albumin and casts. Rotch believes the case to have been due to embolism, but, taken in connection with Rendu's, I am inclined to consider it uremic.

CASE 29.—Rotch:[12] Male, 45. An attack of aphasia three years before and some disturbance of vision. Complete recovery in a few days. February 21, while perfectly well, developed motor aphasia; no paralysis; no disturbance of sensation. Polyuria; increased arterial tension; vision disturbed; hearing good; agraphia. February 25, writing perfect; mind clear; disappearance of aphasia.

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DISCUSSION

ON PAPERS OF DRS. ELLIOTT, HERRICK, KELLY, BISHOP, RIESMAN.*

DR. FRANK BILLINGS, Chicago—Inasmuch as Dr. DeLancey Rochester is not here I will confine myself to that part of the subject he was expected to dwell on and speak of the treatment of chronic nephritis. As already stated by Dr. Herrick, probably the best classification of chronic nephritis, for clinical purposes, is, 1, chronic interstitial nephritis and, 2, chronic diffuse nephritis, the one being attended with contracted kidney and great cardiovascular changes and, in consequence, hemorrhages in the late stages of the disease, especially of the brain, with uremia and a breaking down of the heart integrity. In the other there is a tendency to fatty changes in the different organs of the body with a weakness of the blood vessels, with a tendency to anemia and a greater tendency to early uremic conditions, to serous inflammations of the pericardium, pleura, etc. Sometimes we may be able to separate these great divisions one from the other, yet we may sometimes be mistaken and a case which we think to be one of chronic diffuse nephritis, with pasty, pallid skin, with absence of cardiovascular changes, may show at autopsy to be of the other class. These two classes of chronic nephritis require different lines of management. In the interstitial form we should endeavor to maintain the cardiovascular integrity. So long as the heart is good, and the urinary output is good, even though it is of low specific gravity and total solids not to the normal, the prognosis is good. The excretions from the body, other than by the kidneys, should be looked after, especially the gastrointestinal tract. In this form the anemia is not so apt to be progressive or marked and, consequently, the nutrition of the patient is not so important as it is in the other form; yet the nutrition must be guarded.

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* The papers of Drs. Elliott and Herrick appeared in THE JOURNAL October 4.

In the other class of cases we must also be on guard against the cardiovascular changes and we should look to the excretion from the body through other emunctories than the kidneys. In this form the nutrition must be looked after, for here anemia is more apt to occur. Therefore, hematinic restoratives are required. On these principles of treatment there should occur no errors in judgment in the management of these cases. So soon as a diagnosis of Bright's disease has been made the vast majority of persons order the well-known mixture of digitalis and some diuretic preparation of sodium or potassium, with iron. Each case should be studied separately. If the heart integrity is breaking down, digitalis may be indicated. In another perhaps some of the saline diuretics may be indicated. If the blood is not good, iron may be indicated for a time. I was impressed four or five years ago by an article of Dr. Tyson's on the use of iron in Bright's disease; the mixture suggested was Basham's and it was stated that it was administered without regard to the blood condition of the patient. Iron may be indicated in Bright's disease, but only when anemia is present or the nutrition of the patient is bad. The nutrition of these patients should always be carefully looked after, and the dietary treatment is one of the most important in Bright's disease. One can not select any individual treatment. The milk treatment is one of the best for a certain class of cases, especially where a low diet is necessary. That principle of treatment is recognized by quacks who give a few nuts, and attend to the excretions by ordering much water drinking.

On the other hand, it may be necessary to overfeed the patient who is suffering from Bright's disease; it is not always necessary to take beef away from a patient because he may need it. I want to call attention to this fact: that I do not believe there is any greater amount of poison in a piece of beef than in a corresponding amount of chicken, provided the patient needs that particular variety of food. The nutritional treatment is of great importance. Washing out the body by drinking milk, or other fluid, is one of the most important needs; the medical treatment, while important, is secondary and should be selected.

Dr. T. B. Futcher, Baltimore—I wish to confine my remarks chiefly to cases of chronic interstitial nephritis and the relation they bear to the condition of the blood and vascular system, and also to refer briefly to the statistics with regard to cases of nephritis admitted to Dr. Osler's wards of the Johns Hopkins Hospital and to the cases which came to autopsy in Dr. Welch's laboratory. In twelve and a half years, up to June of this year, 13,900 medical cases were admitted to Dr. Osler's wards, and of this number 590 suffered from nephritis. The nephritic cases constituted, therefore, 4.2 per cent. of the total medical admissions. Of these 590 cases admitted, 42 only were acute, the remaining 548 cases being chronic. The 548 cases include both the interstitial and parenchymatous cases. Of the first 1000 autopsies in the pathological department 314, or 31.4 per cent. showed nephritis; this shows the prevalence with which nephritis is found at autopsy. All these cases were not sent to the pathologic laboratory with a diagnosis of nephritis, the patients in many cases having died of some other disease. I started to look up the statistics particularly with reference to determining the percentage relationship between the contracted kidney due to general arteriosclerosis and the contracted kidney due to other causes, but I am sorry that time did not permit of a careful analysis.

Of these 314 cases of nephritis there were 286 of chronic nephritis. This included the chronic interstitial and chronic parenchymatous forms; 24 chronic cases were diagnosed specifically as arteriosclerotic kidney, i. e., kidneys with chronic interstitial nephritis secondary to general arteriosclerosis, or 12 per cent. of all chronic nephritic cases. I have no doubt but that a great many of the remaining cases of chronic nephritis will, when carefully studied, prove to have been of arterial origin, although a specific statement to this effect is not made in the anatomic diagnosis in the autopsy records. I think that I am right in stating that Dr. Osler is of the opinion that arteriosclerosis is much more frequently a cause of chronic nephritis, i. e., contracted kidney, than is generally supposed. The arteriosclerotic kidney does not show the same grade of atrophy the kidneys of interstitial nephritis of other causes do. The kidneys are apt to be comparatively large, red and beefy in appearance. They are very firm, cut with difficulty and frequently present numerous large depressions on their surfaces. As Dr. Herrick has said, there is great difficulty in differentiating the varieties of chronic interstitial nephritis and I think that an examination of a series of cases will show a material difference in the general macroscopic and microscopic appearances of the small kidney due to primary arterial disease and the ordinary kidney of chronic interstitial nephritis. The condition of the urine in the two varieties of cases differs somewhat. In the arteriosclerotic form the urine is either normal or reduced in amount instead of being increased. The specific gravity is normal or high, the color good and the urine generally contains more albumin than in ordinary interstitial nephritis. The prognosis of the renal condition in an arteriosclerotic kidney does not so much depend on the condition of the kidneys themselves as on the condition of the heart and general vascular changes.

I think it is very important that the prevalence of extensive arteriosclerosis in elderly people should be kept in mind. While Dr. Bishop and Dr. Riesman were reading their papers it occurred to me that possibly a number of the conditions they recorded were due to primary arterial disease rather than to the condition of the kidneys. For instance, in arteriosclerosis it is not uncommon to find a temporary aphasia, lasting a few minutes or hours, or possibly a day or two, which entirely clears up. Within the last two or three years I can recall three cases occurring in the Johns Hopkins Hospital wards in which there were attacks of temporary aphasia lasting but a few hours which cleared up entirely. From the history of these cases, and the physical examination, it seemed most probable that the aphasia was due to vascular disturbances in the brain rather than from any toxic action resulting from disease of the kidneys.

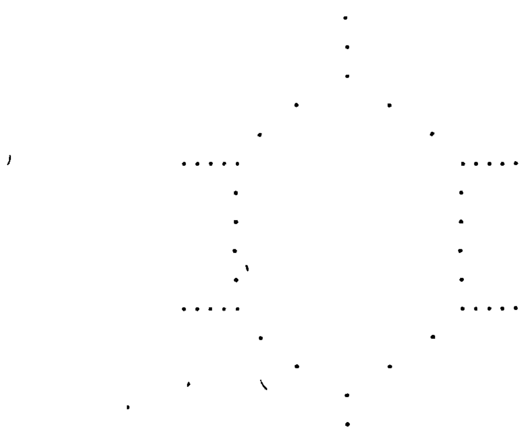
With regard to the treatment, I should like first to emphasize the importance, in uremic coma, of the intravenous injection of salt solutions. During the last three years I recall three cases of severe uremic convulsions treated in this way. Venesection was first performed, the amount of blood varying from 300 to 600 c.c., according to the condition of the pulse in each case. Then 1000 c.c. of normal salt solution was allowed to flow slowly into the vein. The intravenous injections may be repeated, and it is well to follow the injection by a sweat-bath. All the three cases thus treated recovered from the convulsions and became as well as they were ordinarily, considering their condition. I think the use of this normal salt solution of great importance in the treatment of this complication.

I should like to refer briefly to a treatment which has recently been suggested and adopted by Edebohls in cases of chronic nephritis, namely, decapsulation of the kidneys. Dr. Edebohls has reported a series of cases of chronic nephritis in which this treatment was adopted with advantageous results. I do not think sufficient time has since elapsed to draw any very definite conclusions regarding the advisability of this operation. The operation has been performed twice recently by Dr. Halstead in the surgical department of Johns Hopkins Hospital. The first case was operated on two months ago. It was a case of chronic parenchymatous nephritis which first came under observation three years ago, with general anasarca, etc., following exposure to cold. He entered the hospital again four months ago and, under the usual line of treatment, the anasarca cleared up. The patient continued to have from 0.6 to 0.8 per cent. of albumin in the urine and an operation was suggested and the patient, a boy 19 years old, consented to it. Both kidneys were stripped of their capsule. The wound healed readily and the patient was about in two weeks' time. He is better and states that he has not felt so well for years. The percentage of albumin has been materially reduced. The second case, operated on about two weeks ago, is doing fairly well. The patient was a girl of 15 years with a chronic parenchymatous nephritis. Of course, I can not yet say what results will follow in this instance. The benefit arising from this operation is supposed to result from the increased vascularization of the kidney which results from the stripping off of the capsule. The operation is still in its experimental stage and we must await fuller statistics before making any definite statements regarding it.

Dr. V. C. Vaughan, Ann Arbor, Mich.—I have listened with great pleasure and profit to the valuable papers read this morning on nephritis and I know they will constitute a valuable contribution to the literature of this subject.

I am not altogether satisfied with the diagnosis of the case made by Dr. Riesman; he may be right, but I feel quite convinced that there was no justification for him to say that the aphasia in this case was uremic, because we meet with other cases, identical with this one he has described, in which there are no evidences of any structural disease of the kidneys. It has been my fortune to see two or three of these cases which were very pronounced, and in one there were frequently recurring attacks of aphasia; in this case I have studied the kidneys and blood and find no evidence of nephritis. All that can be said of these cases is that there must be spasm of the arterioles of the brain, probably toxic in origin. That it is always accompanied by Bright's disease I do not believe.

Uremia has become a word which means almost anything. I want to say a few words in description of the theory which gives me a better conception of the changes in the kidneys than anything else. I should say that Bright's disease is always due to toxic causes. The toxins which cause Bright's disease may be designated as nephrolysins. The action of these nephrolysins will be better understood by a study of Ehrlich's side chain theory, the greatest theory advanced in medicine. Let us take the benzene ring, with six side chains and so represent the chemical composition of the kidney cell, thus:



A nephrolysin is any substance which will split off one of the side chains. We know some of the substances which will do this; for instance, chromate of potassium. We can produce Bright's disease in animals by increasing doses of this drug. The side chains of a kidney cell are the components that permit of the proper function of the kidney; with the side chains normal the kidney excretes normally. Another thing we should know is that the side chain, which is cut off, is poisonous to other tissues of the body. If you take an animal and induce Bright's disease by the use of chromate of potassium you then can take the blood serum from that animal and inject it into another animal and it will be poisonous to that animal on account of the substance that the chromate of potassium has split off from the kidney cells. Nearly all cells of the body can so be split up and produce a toxin which, when injected into another body, will poison its cells. We are now on the threshold of the autogenous diseases. Nephrolysins may be divided into certain classes, but more particularly into heteronephrolysins, i. e., when the poisons which injure the kidney are introduced from without, and idionephrolysins, i. e., poisons generated within the body. Again, we may have, 1, bacterionephrolysins of bacterial origin, and 2, autonephrolysins of digestive origin. The bacillus of diphtheria produces a toxin which affects the kidney; a child with scarlet fever produces a bacterionephrolysin and so we have a scarlatinal nephritis. On the other hand, there are certain autonephrolysins, i. e., those due to disordered nutrition, in which the cells are injured by poisons in the body. When we get a real classification of Bright's disease it will be one that is founded on its etiology. At present we can not have one, but from the fact that we have morphologically and pathologically definite forms of Bright's disease leads us to the inference that there are two or three classes of nephrolysins. It seems to me that this way of looking at it may possibly be of benefit and it certainly gives me a better idea of nephritis and holds out a better hope of getting at the bottom of the thing.

Dr. N. S. Davis, Jr., Chicago—The possibility of classifying cases of nephritis properly seems as remote as it did some years ago. We have made no advances in this direction, probably because we do not understand fully the causes of diseases of the kidneys or the chemical changes that take place in their cells and that create the gross anatomic changes which we do know. Such changes as Prof. Vaughan has described to us we need to understand and until we do there can be no great advantage made in our knowledge of renal diseases.

I wish to thank Dr. Herrick for emphasizing the point that, so far as clinical methods make a diagnosis possible, an intermediate form of nephritis must be recognized, one that presents a commingling of the symptoms of chronic interstitial and diffuse nephritis. When we see cases once, or possibly twice, only, it is impossible to study each individual so as to be able to say that he belongs to the group of interstitial or diffuse cases, therefore he must be placed, at least temporarily, in the intermediate group. If we are able to watch an individual long enough I think we can almost invariably determine to which group he belongs. From the standpoint of prognosis, so far as our knowledge at present enables us to make a prophesy, it is very important to be able to say whether the case is one of interstitial or diffuse nephritis. However, from the standpoint of treatment it is much more important to determine with accuracy what is the functional power of the structures of the kidney; whether the glomeruli are capable of eliminating a sufficient amount of fluids from the body, and whether the epithelium of the convoluted tubules can eliminate the solids of the urine. These two points are of the greater importance from the standpoint of treatment than a knowledge of the anatomic changes which are taking place in the kidneys. Moreover, we can determine the functionating power of the kidney by a careful examination or by repeated examinations.

I have met rather frequently a group of cases which seem to puzzle many practitioners. These are cases that frequently are first discovered by the life-insurance examiner. He finds albumin in the urine, sometimes a considerable quantity. But apparently the patient is in good health. There is no edema and there are no arterial changes characteristic of Bright's disease. in spite of the constant presence of large quantities of albumin in the urine. In these cases the quantity of urine excreted is normal, and the amount of solids excreted is normal; apparently the functions of the kidneys are not disturbed. These are cases in which unquestionably a large number of the glomeruli are so injured that they permit albumin to escape into the urine, while other glomeruli not affected produce an abundance of urine. In many instances I have watched these cases for long periods of time; little by little there occurs a lessened elimination of urine and symptoms of a chronic diffuse nephritis develops. These are undoubtedly cases of diffuse nephritis. They are easily distinguished from cases of interstitial nephritis in which there is no considerable disturbance of general health, but a large output of urine containing only a small quantity of albumin; whereas, in this group of cases there is a large amount of albumin present in the urine as well as a large amount of urine excreted. Moreover, the disease often occurs earlier in life than does interstitial nephritis. In both groups of cases there is a small amount of sediment and few casts in the urine.

With regard to treatment, I want to emphasize what has already been said, that more attention should be given to the condition of the gastrointestinal tract and to the elimination that takes place through it than is commonly given. Probably most of you have had the same experience that I have had and have observed in your hospital practice very many cases which, when they first enter, void urine containing a few casts and a small amount of albumin. The presence of these abnormal ingredients of urine shows an irritation, or disturbed functionating power of the kidneys, which lasts only a few days, disappearing when the patients are placed on a suitable diet and are placed at rest. I have observed in these cases, and I presume the rest of you have, that improvement has been uniformly brought about by cleansing the gastrointestinal tract, removing from it material which, if absorbed into the blood and eliminated by the kidneys, would directly irritate them. I wish to emphasize the fact, that chemicals are constantly produced in the intestines by abnormal fermentation, which, when absorbed and carried by the blood to the kidneys to be eliminated, are injurious to them. Therefore, whenever we have to do with cases of nephritis it is all important that such irritating and destructive product should be eliminated from and by the intestines as fast as possible and the gastrointestinal tract should be kept as clean and its contents as free from abnormal fermentation as possible; this is really the successful treatment of such cases. In both acute and chronic nephritis, especially in those cases in which the amount of urine excreted during the twenty-four hours is diminished, a milk diet is of the greatest importance both because milk does not ferment in the gastrointestinal tract so as to produce those ingredients which irritate the kidneys when they are eliminated and because it is an important diuretic.

In cases of chronic nephritis, in which there is an abundance of urine and good excretion of the nitrogenous or solid matters, it is often harmful to restrict the patient to a milk diet. Indeed, it is not always important to restrict the diet closely. In prescribing diet in those cases we should be guided by the ability of the patient to digest and assimilate food. Some patients will do well on a nitrogenous diet. When they eat a moderate amount of meat, they seem to improve in general health, vigor and strength. On the other hand, a larger proportion of cases, when placed on such a diet, will eliminate an increasing quantity of albumin in the urine and develop other symptoms of gravity. In other cases farinaceous foods can be given with benefit. It is often best to avoid mixtures of foods in the stomach; therefore, at one meal chiefly or exclusively farinaceous foods should be given and at another proteids or fruits. Food should be such as can be rapidly digested, perfectly absorbed and utilized, and as little if any retained in the intestines to ferment or putrefy. This is really the key to the proper adaptation of diet to individual cases of nephritis.

Dr. John A. McKenna, Philadelphia—I should like to report two cases of acute nephritis caused, I believe, by the invasion of the kidney by the *Oxyuris vermicularis*. These are the only cases in which I feel sure the nephritis was caused by the seat-worm, although I found ovi in the urine of another case. In the microscopic examinations of these cases the chance of the eggs being washed from the orifice of the urethra, the labia or the bladder walls was excluded, for repeatedly were the bladders flushed with antiseptic solutions before the urine in which the eggs were found was drawn. In neither of these two cases did the nephritic symptoms clear until the patient had been purged with anthelmintics. After such purging I drew the urine from the bladder and found immotile eggs of the seat-worm and in one instance a dead female worm. I wish to record these cases now simply as a preliminary report.

Dr. William Bailey, Louisville, Ky.—The papers and the discussions on them this morning constitute a valuable contribution to the literature on nephritis. I also wish to emphasize what has already been stated, that it is the individual who is the subject of the disease that is to be treated rather than the organ involved. This is very important because the organ is an eliminating organ, and is for excretion only. While we have not learned very much with regard to the etiology or the pathology, or the classification of this disease, I think that, on consideration, you will find that it is not often that there is disease of the kidneys alone. Take a cirrhotic kidney with alcohol as the cause; alcohol will not make a cirrhotic kidney unless there is evidence of increased development of connective tissue elsewhere in the body. When the kidneys are not doing their duty there are other organs in the body which take on additional work and so take care of the patient; the skin, the lungs, the liver and the alimentary canal are of particular importance in this respect, lessening the work ordinarily placed on the kidneys. The diet should be so managed as to give the best possible nutrition with the least possible danger coming from any retention of toxins. I think that much can be done by a further study of these nephrolysins which give trouble to the kidney.

Dr. E. F. Wells, Chicago—I wish to emphasize the fact that the danger in chronic interstitial nephritis lies in the residual poisons which lie without the blood vessels, and that the uremic disturbances are due to disturbances in the circulation, which permit the flow of these poisons into the general circulation and their transportation to the brain. Every advanced case of chronic interstitial nephritis is bordering on uremia; that can be proven clinically to the satisfaction of every man who bleeds and examines the blood of his patients. In some cases the urea in the blood may be as high as 0.4, 0.5, 0.6, or even 1 per cent.; it is always high and no matter what is done for the patient it will remain high.

One point with regard to the effect of muscular exercise on the elimination of the solids by the urine. I can best illustrate this by mentioning the case of a gentleman whom I have carefully observed for several years, with chronic interstitial nephritis. In this patient the quantity of urea and solids have been at times so diminished that he excreted only 50 grains of urea in twenty-four hours. On one occasion, when the excretion of urea was at the lowest, he became acutely delirious, with the most violent muscular movements for about thirty-six hours, and during this time more than 500 grains of urea were excreted in twenty-four hours—a larger amount than has ever been excreted since the patient came under observation. Taking this as a hint in the management of these cases (during the past I have always advised that the patients be kept quiet), I have since, as a rule, advised my patients of this class to take active or passive muscular exercise, with the effect of constantly increasing the urea output to a noticeable, even considerable extent, and always with benefit. In addition, there has been a slight diminution of urea to be found in the blood.

During the past few years a number of cases of transient and recurring aphasia, occurring in nephritis, have come under my observation. I can not believe that they are of extreme rarity in nephritis conditions—which opinion was also that of the late Dr. Purdy. In one case, a robust man under 50 years of age, who had always been actively employed, and who was so well that in twenty years' time he had not lost a day from his business, was taken one Sunday with transient aphasia; within twenty-four hours he was in uremic convulsions and died.

Dr. H. A. West, Galveston, Tex.—I wish to call attention to one phase of the subject in relation to the prognosis in chronic Bright's disease which has not been mentioned in the discussion, and which I do not recall having noticed in the literature on this disease. Living in a locality where chronic nephritis in all its forms is exceedingly common, I have observed quite a number of cases of well-defined chronic Bright's disease occurring in young adults entirely recover. In seeking for an explanation of this fact I have been led to the conclusion that this departure from the otherwise universal law that the disease sooner or later ends in death, is due to the possibility of a separate and reproductive process taking place in the cells of the kidneys as a part of the general rapid evolution and growth of the tissues incident to childhood and young adult life. In regard to the general applicability of a milk diet in Bright's disease, I wish to suggest one precaution, viz., the necessity of avoiding constipation, owing to the non-use of foods which have a laxative effect and the small amount of residuum left in the bowels to excite peristalsis which on such diet there is a very decided tendency to imperfect intestinal elimination. Under such circumstances in addition to abdominal massage, and such muscular exercise as the patient can stand the laxative mineral waters and saline purgatives are frequently required to secure sufficient intestinal cleanliness and elimination.

Dr. James Tyson, Philadelphia—I am inclined to believe that too much importance is attached to interstitial changes as primary in chronic interstitial nephritis. I believe the changes, even in this form, may be primary to the parenchyma and as secreting substance of the kidney is destroyed it is replaced by connective tissue. Nephritis is a toxic disease so far as its etiology is concerned. It appears to me, therefore, perfectly rational to suppose that the changes begin in most cases in the parenchyma because it is on the parenchyma that the poison first spends its force, and that as it is destroyed it is replaced by interstitial tissue.

I wish to refer also to Dr. Riesman's paper and the discussion relating to it. It may be that we are disposed to exaggerate the frequency of these instances of cerebral symptoms due to uremia. But that they do occur I can attest from my own experience. Analogous conditions occur in diabetes mellitus where the same symptoms are produced by accumulated toxins in the blood. Symptoms of aphasia and the motor phenomena described are quite often met in diabetes mellitus and from a similar cause. How this cause operates we do not know, but it may be by producing vascular changes of transient character.

I wish to speak of one point more, growing out of Dr. Davis' remark that in the cases of albuminuria without other symptoms it may be that a certain number of glomeruli are defective and so allow a leakage of albumin, while there are enough left to maintain the functions of the organ. But what of the cases of albuminuria in adolescence? In both boys and girls between the ages of 14 and 21 years there may be more or less albuminuria without other symptoms; as they approach maturity it disappears. It almost invariably happens that this albuminuria disappears entirely and if the normal albuminurias, as they are also called, are due to this cause, we must suppose that ultimately the useless glomeruli are replaced by normal kidney structure.

Dr. R. F. Weir, New York—This subject of chronic nephritis has attractions for the surgeon in considering the newly proposed operation of decapsulation of the kidney with the idea of getting more blood into the organ. Experience with this treatment is as yet small, but I wish to increase the reports already made by two cases, one operated on by Dr. Bull and the other by myself at Roosevelt Hospital, New York. Dr. Bull's case of enlarged cirrhotic kidney—decapsulated on both sides—showed a marked improvement. My own case was in a negro who had had renal trouble for a considerable period of time with a marked anasarca and dyspnea. The capsule was removed with difficulty from both kidneys. In both cases an expedient was resorted to with advantage. In order to diminish the damage from the prolonged use of the anesthetic we resorted to this plan, i. e., had two surgeons to work on the patient at the same time. I took one side and my assistant took the other. The lifting out of the two kidneys beyond the skin level and their decapsulation, replacement and suturing of the wound only by this method occupied less than twenty-five minutes, without apparent detriment to the patient. In the case under my care there was no improvement at the end of three months following the operation; in fact, the patient now is worse than before. I confess I am yet skeptical as to the propriety of applying this procedure to these cases. The analogy between a cirrhotic kidney and a case of cirrhosis of the liver does not, I think, hold good; the renewed blood supply to the liver is of importance to the circulation beyond it even though the liver itself is not benefited thereby. It has not been shown in the liver in the successful cases of Talma's operation that the liver function has been thereby improved. It requires a large number of successful cases to show that damaged renal cells improve in function under an improved blood supply. Experience, however, when ample, will decide about this.

Dr. S. C. Gordon, Portland, Me.—One year ago I operated on a patient who was suffering from a movable kidney. A few months after I removed the appendix and, two months later, the left kidney was opened. The physician who sent this patient to me had detected the kidney below the ribs. The patient had great pain; there were albumin and casts in the urine, and she was secreting but eight ounces in 24 hours. One week ago last Monday (June 3) I operated,* decapsulated and lifted the kidney; it was found to be twice its normal weight and was horse-shoe in shape. I fixed the kidney, which was found to be extremely movable, by stitching the capsule to the muscles and fascia. Within three days her heart symptoms improved; she has needed no anodyne since the operation. The day before I left (Monday) it would have been extremely difficult to detect any serious trouble with the heart; the hypertrophic condition and strong beating has ceased and everything pointed to a favorable result in her case. The kidney bled much after cutting the capsule and I think that had much to do with the relief which she experienced. Dr. Edebohls reported ten cases operated on by him ten years ago for floating kidney; in every case there was present Bright's disease. Six of these patients absolutely recovered from their Bright's disease. He is now operating for Bright's disease alone, and certainly with marked success.

Dr. A. Palmer Dudley, New York—The remarks made by Prof. Weir brought to my mind a procedure which will lessen the dangers produced by the administration of a general anesthetic. It has been my privilege in the Harlem Hospital, New York, where I do general surgery, to do much of the general surgery that is required below the diaphragm under the influence of spinal anesthesia. I have had sufficient experience with this method to be able to state positively that spinal anesthesia, using a 2 per cent. solution of sterilized cocain, will last from twenty minutes to one hour and a half. I have operated for abscess of the liver, for shot wounds of the abdomen, and many other conditions below the abdomen, using the spinal anesthesia with success. This method can not be employed for operations above the diaphragm. In cases of Bright's disease where it is proposed to submit the patient to the surgical procedure of decapsulating the kidney, the safest method is by spinal anesthesia.

Dr. David Riesman, Philadelphia—Dr. Vaughan has questioned the nature of the case reported by me, and I desire to say that I do not wish to be understood as stating that all cases of temporary aphasia are due to uremia. In my paper, I have a section—which, together with much other matter, I had to omit, for lack of time—in which I deal with the other causes of transitory aphasia, and mention diabetes mellitus, lead poisoning, belladonna intoxication, etc. But there can be no doubt that the case reported by me was one of uremic aphasia. As I have stated in my paper, the blood vessels naturally participate in the production of the condition, and vascular changes, functional or organic, help to account for the focal character of the symptoms.

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* Dr. Gordon writes later: "July 3, one month later, the patient returned to her home very much improved in every respect, although there were several days during the convalescence when she secreted but one or two ounces of urine. Before leaving for home she was secreting a normal amount and all the other symptoms were favorable for permanent recovery. I believe the operation promises much for this serious disease, and principally from the relief it gives to the passive congestion of the kidney."

Quinin as a Dressing.—Dr. J. Reid (*London Lancet*) has used a mixture of 1 dr. of quinin and 8 fl. oz. of emulsion of cod-liver oil as an application to ordinary ulcers, and to those of rheumatic and syphilitic origin; also in a case of gangrene of the skin, and after a burn, where a large surface, about a foot square, formed a slough which had to be removed on account of ulceration. All wounds took on a healthy appearance after the application. The mixture also acted well in intertrigo and eczema.

IMPROVED TECHNIC OF AMPUTATION AND TREATMENT OF THE STUMP IN APPENDECTOMY.

JOSEPH RILUS EASTMAN, M.D.
INDIANAPOLIS.

After the separation of adhesions binding down the appendix and ligation and splitting of the meso-appendix, the surgeon comes to the most important steps in appendectomy, namely, the abscission of the appendix and the disposition of the stump. By many operators the meso-appendix and the neck of the appendix are, as is well known, tied wtih strong silk ligatures, cut off and the stump of the appendix is cauterized with pure carbolic acid and invaginated into the coats of the colon by Lembert sutures. Another popular method is that of turning down a cuff of peritoneum, pulling up the other coats, ligating these at the base, abscissing, permitting the musculo-mucous stump to retract and suturing the peritoneal cuff over the stump. This is well known as Barker's method, and is used with slight modifications by Kelly, Deaver and others.

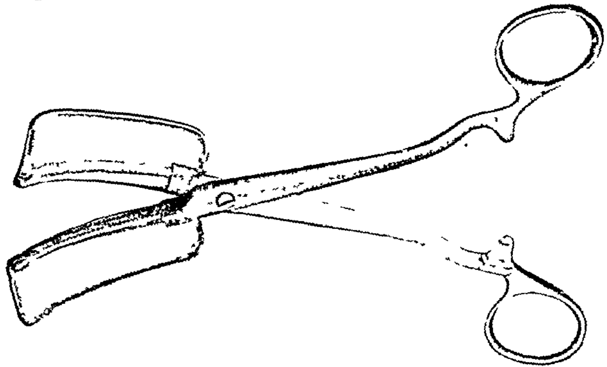

Fig 1—Appendix forceps with shields attached.

Many surgeons prefer not to ligate the mucous membrane, but simply to cut the appendix across, closing the distal end with a clamp or ligature and compressing the proximal end with the fingers, then invaginating the stump into the cecum and securing the whole with the purse-string or Lembert suture. When this method is used, particularly if the tissues be much thickened, there is liability of escape of the contents of the cecum or appendix, or both, into the peritoneal cavity during the operation.

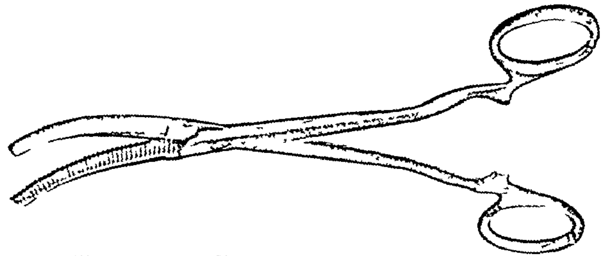

Fig. 2—Appendix forceps with shields detached.

Joseph Eastman applied a light clamp to the base of the appendix and removed the appendix by cauterization. He invaginated the stump with four or five Lembert sutures placed in position, while the clamp yet held the base of the appendix and prevented the escape of the contents of the intestine. The stump was invaginated by the tightening of the middle ligature simultaneously with the withdrawal of the forceps.

Deaver describes his technic as follows: "The meso-appendix is to be tied off and cut away from its appendiceal attachment. This as accomplished by transfixing its base by a small pair of forceps. A piece of catgut is engaged in the jaws of the forceps, which are then withdrawn and with them one-half of the catgut ligature. After tying the ligature the meso-appendix is cut away with a pair of scissors. A circular incision is now made through the serous coat of the appendix one-quarter of an inch from its junction with the cecum. The serous coat is next stripped back toward the cecum, leaving a cuff of peritoneum, after which the appendix is ligated with silk and the organ removed. The mucous membrane of the stump of the organ is curetted and antisepticized with a solution of mercury bichlorid and carbolic acid (1:4000 and 1:60 respectively). The serous coat is stitched with a fine needle and silk over the stump thus left. The stump now covered with peritoneum is invaginated into the wall of the cecum with continuous Lembert sutures." Deaver adds that "when the appendix is gangrenous or friable, or is involved in inflammatory lymph, we have to content ourselves with a simple ligature, taking in all coats of the organ. The stump thus remaining should, if possible, be invaginated into the cecum."

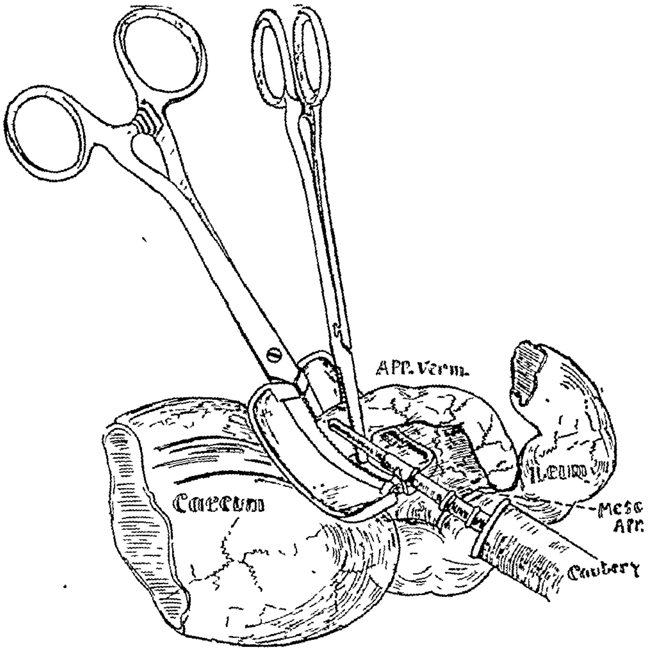

Fig. 3—Appendix forceps with detachable shields for the arrest of pus and intestinal contents from appendix verm. and for the protection of intestinal serosa from the heat of the cautery.

McBurney, after cutting away the appendix as usual, holds the edge of the stump with forceps. The permeability of the short canal is determined with a probe. A fine point of the Paquelin cautery is then pushed in so as to destroy the mucous membrane nearly to the colon and a fine catgut ligature is tied about the stump within the cauterized area. The button of the stump beyond the ligature is then reduced with scissors to very small proportions and its surface freshly cauterized.

Some operators prefer pure carbolic acid to the Paquelin cautery for the destruction of the muscosa of the stump.

Dawbarn (Dennis' System of Surgery) passes a purse-string suture of silk through the superficial layers of the cecum one-fourth of an inch distant from the base of the appendix. It is first placed but not tied. The appendix is cut off, leaving the stump about half an inch long. The canal of the stump is dilated with fine forceps and the stump is invaginated into the colon. The purse-string suture is now tied, the forceps used for invagination being withdrawn at the moment of tying. An objection to the purse-string suture [illegible] in the fact that where it is alone used reliance is placed on a single thread which, if it breaks or cuts out, may permit leakage. It should therefore always be reinforced by Lembert sutures.

Whatever the method employed, the operator seeks, as has been observed by Howard Kelly, to accomplish two things, the prevention of contamination of the surrounding tissues with bacteria or pus from the lumen of the appendix or intestinal contents from the cecum and to prevent injury to the intestines, large and small. It can hardly be denied that the removal of the appendix by the application of the cautery between the jaws of the two pairs of light clamps vouchsafes more protection against infection of the peritoneum than simply cutting off with the scissors or knife. When the stump is thick and rigid and much disorganized, invagination may be impractical, in which case annihilation with the cautery *with accompanying destruction of bacteria* will leave a condition of affairs more favorable for prompt healing than may be produced by depressing the dangerously infected stump into the wall of the colon (instead of into the lumen of the latter), in which case drainage of the septic stump into the colon may fail to occur.

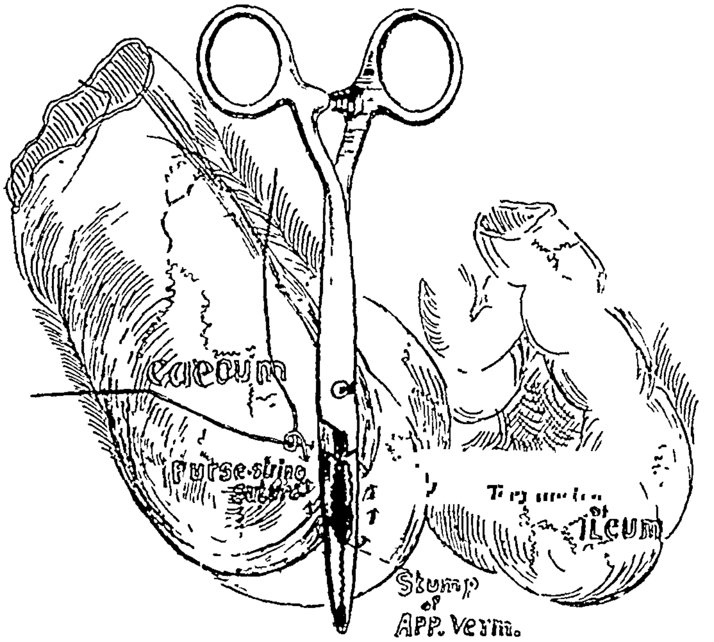

Fig. 4.—Shields removed from forceps permitting introduction of purse-string suture. (After Dawbarn.) Suture is inserted before the removal of forceps.

Kelly further observes that "in some cases where there is extensive suppuration of the appendix, or where its peritoneal coat is friable, it may be impossible to obtain a peritoneal envelope for the stump. Where this can not be effected, he says, "it is better to throw a silk ligature around the entire appendix, tying it tightly, and then to cut it off beyond the ligature, sterilizing the end and covering it with the peritoneum by suturing a fold of the colon over it."

An objection to tying a circular ligature about the base of the appendix either internal or external to the serosa, is *that such a ligature having been applied does* not permit of exploration of the canal of the stump for the purpose of determining whether the same is patulous. If a ligature is thus applied beyond a stricture the operator will, as McBurney has stated, reproduce the conditions liable to produce a fresh attack. After the abscission is made the probe should always be passed "through the base of the appendix into the colon to determine that natural drainage for the stump will exist. If the canal is not pervious the interior up to the point of stricture should be dissected out or cauterized before suture or ligature is applied." The use of a light clamp permits exploration of this canal. If two light clamps are used and the appendix is severed between the jaws of the clamps with the Paquelin cautery, the danger of the escape of pus, fluid intestinal contents, fecal concretions or other infectious material into the peritoneal cavity is greatly reduced. If the author's special clamp, shown in the illustration, be used, all material escaping from the appendix on severing it with the cautery will be caught in the shields which are at the sides of the forceps jaws. These may also be appreciated for their value in holding back obtrusive coils of small intestine and portions of omentum out of the range of the heat of the cautery. No matter how accurately gauze sponges are arranged about the base of the appendix, they can hardly

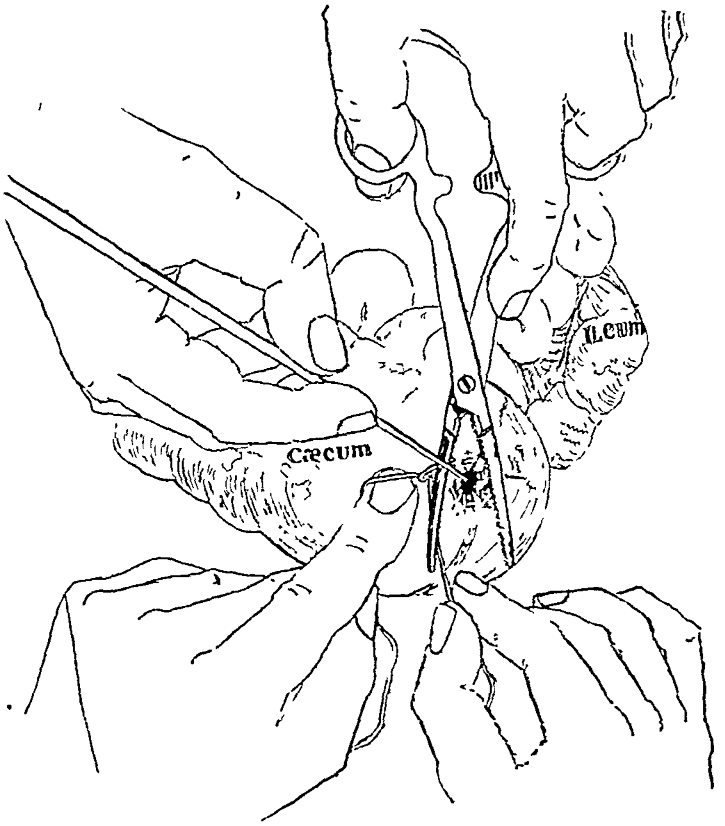

Fig. 5.—Tightening of the purse-string suture simultaneously with removal of forceps and invagination of stump.

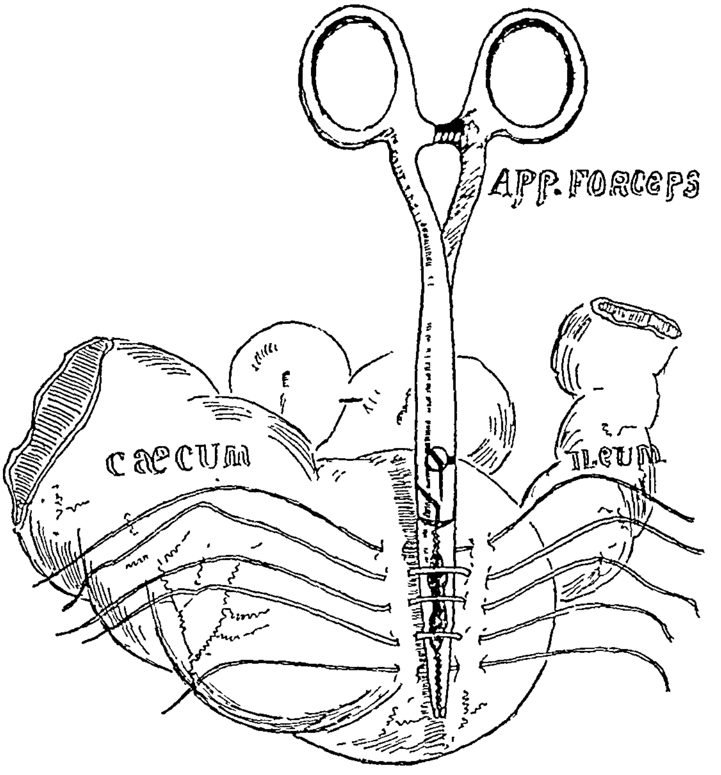

Fig 6.—Lembert sutures in position before removal of forceps

protect the peritoneum from the heat of the cautery or from contamination with the contents of the appendix as can these shields.

After the separation of the appendix the shields may be very easily removed. No jerking is required. The slightest traction releases them. After they have been displaced the base of the appendix is held in a simple light clamp. It is now readily possible to introduce the purse-string suture, after Dawbarn's method, or the Lembert sutures, after the method of Joseph Eastman, the forceps remaining in place and preventing escape of infectious material until the purse-string suture is ready for tightening, or the Lembert stitches, all in place, are ready for tying, according to the choice of the operator and the shape of the stump. The purse-string suture, if used, should be drawn tight as the forceps are removed. On the release of the stump by the removal of the forceps the canal may be explored and the stump invaginated. All of these manipulations may, if it be desired, take place simultaneously.

If the method described be used there is hardly any time at which there is a possibility of pus or any infectious matter from the lumen of the appendix or cecum escaping into the peritoneal cavity. The jaws of the forceps are so light as to cause very little contusion or devitalization of the tissues of the stump.

The use of the forceps minimizes hemorrhage and will in most cases shorten the time of operation. As to the use of the cautery for the separation of the appendix there can hardly be a valid argument against its use. McBurney and many others cauterize the stump after removal of the appendix. Why, therefore, not secure the additional safeguard against infection by making an igni-amputation of the appendix with the cautery? In most cases a separation may be accomplished with the cautery almost as quickly as with the knife, and certainly with greater safety. The forceps should have slender jaws beveled on the under side to avoid cutting the serosa of the cecum where they compress.

The forceps as represented in the illustration appear somewhat heavier than they should be. The grooves in the jaws should not run transversely, but parallel to the jaws of the forceps. The jaws with longitudinal grooves may be more readily withdrawn from the appendix.

THE SUCCESSFUL TREATMENT OF GONORRHEA AND ALL INFLAMMATORY DISEASES OF THE URETHRA

BY PACKING IT WITH AN ANTISEPTIC OILED DRESSING.

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Neisser declares gonorrhea to be the most prevalent contagious disease, except measles, in all Europe, and that more than three-fourths of the urban population have had the disease. I believe reliable statistics would show the same condition to exist in America. So widespread is this disease that few practitioners are ever without one or more cases. The consequences and sequelæ of gonorrhea are so often hurtful and its treatment by the profession generally has been so uncertain and unsatisfactory that it really is to be considered a woeful disease.

The injection treatment, perhaps the most universally used, and, by the way, the most abused, can never be depended on to yield definite results. The irrigation treatment, now popular with a large number of physicians, is so often disappointing that it is scarcely more commendable than the injection treatment. Internal medication is not to be considered a treatment *per se*, and should only be used as an auxillary to local treatment. Certainly nothing approaching a specific has ever heretofore been proposed to treat this most common affliction of mankind. Hence it is with peculiar pleasure that I announce to the profession a new method of treating this intractable malady by packing the urethra with an antiseptic oiled dressing.

When a patient presents himself for treatment he is examined carefully to ascertain the real condition to be dealt with: whether the case be acute or chronic, anterior or posterior gonorrhea, and what complications, if any, exist. I believe in giving only the most important directions and require them to be carried out. When too many directions are given the patient he is not careful to follow any of them. I advise bodily rest only when convenient for the patient. A regular nonstimulating diet is allowed. Coffee, tea and tobacco are to be used sparingly. It is better if they are discontinued entirely. Alcoholic drinks and sexual indulgence are absolutely prohibited while under treatment. Salines are directed to keep the bowels open. The treatment proper is given in the following manner: After the patient empties his bladder completely the urethra is irrigated with a hot solution of potassic permanganate, about 1 to 3000. For this purpose I use the Valentine irrigator; though, if nothing better is at hand, the urethra may be flushed out several times with the ordinary rubber-tipped hand syringe. The packer is then dipped in a bottle of the solution used on the dressing, or glycerin may be used instead; after which the penis is grasped with the fingers of one hand and the packer introduced slowly and carefully into the urethra with the other hand. It is passed back about four inches in anterior gonorrhea and back to the neck of the bladder in posterior gonorrhea and prostatic troubles. Force is never used in introducing the packer. The urethra is then lightly packed with one inch continuous gauze strips, or better, a loosely spun cotton cord, which I now use, saturated with one of the following solutions:

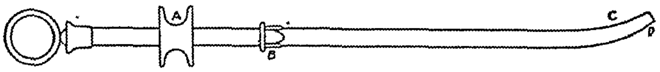

Fig. 1.—A. Groove for index and second finger. B. Slide. C. End slightly tapered and curved. D. Edge rounded and smooth.

℞. Iodoform ....gr. xcv
Balsam of Peru ....ʒiv
Castor oil q. s. ad ....℥iv

Rub iodoform in caster oil, then add balsam of Peru. You will notice that the odor of iodoform is practically masked in this solution. Or:

℞. Ichthyol
Resorcin, āā ....gr. xl
Balsam of Peru ....ʒiv
Castor oil q. s. ad.........................℥iv
M. Ft. sol.

The instrument is gradually withdrawn as the dressing is pushed through, and when it emerges from the meatus the cord dressing is clipped with scissors, leaving about one-eighth inch of the cord outside of the meatus, which can be taken between the fingers when the cord is to be removed. A small piece of cotton is placed over the head of the penis and treatment is complete. The patient is now instructed to go as long as he possibly can before urinating, when the cord is slowly removed. The average patient will go from five to eight hours before urinating without much discomfort. I have packed the urethra at 8 or 9 o'clock p. m. and the patient has retained the packing all night. Ordinarily I pack the urethra once a day until after the discharge ceases, then every other day for ten days or two weeks. In some cases it is necessary to pack twice a day, morning and evening, till the discharge ceases. When the patient reports once a day for treatment he is given a solution to inject himself two or three times a day: a 2 per cent. solution of protargol in acute cases and a 1 per cent. solution of zinc sulpho-carbolate in chronic cases. While this may not be necessary, it is my practice to do it, unless the patient can report twice a day for treatment. The accompanying illustration shows an instrument I have designed to pack the urethra. While the instrument is intended primarily for a urethral packer. it can be used to pack any cavity equally as well. It is made on the order of a urethral sound, with the distal end slightly curved and tapered. The edge of the distal end is rounded and smooth. This facilitates introduction into the urethra and prevents injury to the urethral mucosa. which is an important consideration in the treatment of the inflamed urethra.

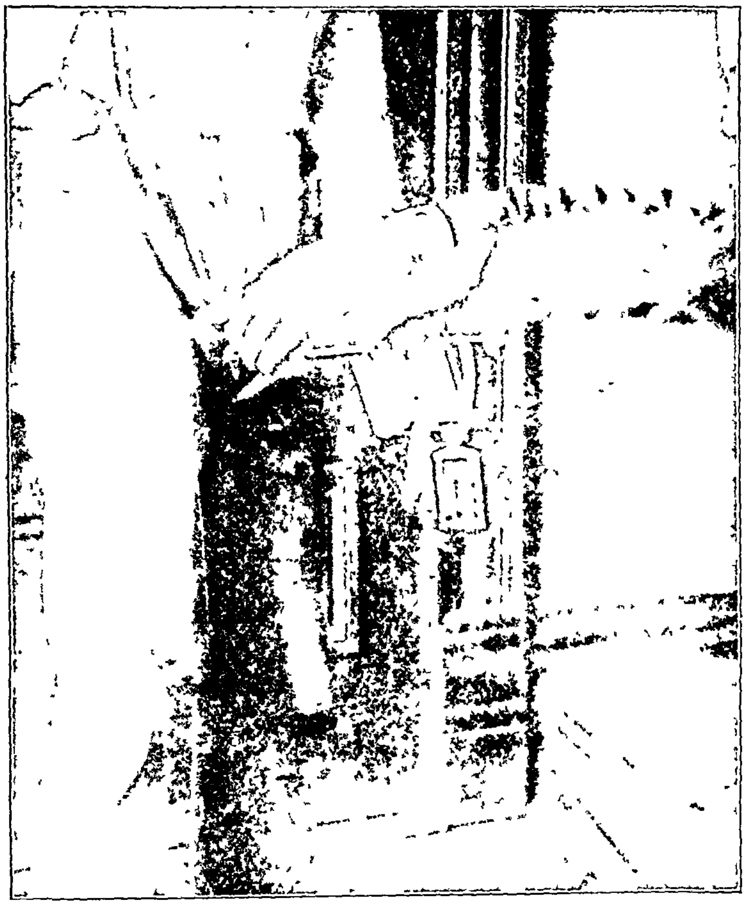

Fig 2 The method of packing, patient standing, physician sitting

I submit below a record of some of the cases treated:

Case 1.—C B C., clerk, unmarried, health good. Acute gonorrhea of one week's standing. Treatment was begun by having patient empty bladder completely. Then the urethra was irrigated with a hot solution of potassic permanganate about 1 to 3000, after which it was packed four inches back with gauze in strips saturated with the solution. The patient was then instructed to go as long as he could before urinating, then to remove the packing slowly by catching it between the fingers and making gentle traction. He was irrigated and packed once a day for a week, then every other day for ten days, when he was dismissed. The discharge ceased after the second packing.

Case 2.—M. R., engineer, unmarried, health good. Had treated himself by injections for about two months, yet there was a free yellowish discharge. Urethra was very tender about two inches back from the meatus. He was packed every day for six days, then very other day for ten days, when he was dismissed. The discharge ceased after the third day.

Case 3.—H. G. N., clerk, married, health good. Chronic gonorrhea for ten weks. Had been treated by irrigation since attack first began. There was a scant thin discharge during the day, with the morning drop. There was also a very tender spot about an inch back from the meatus. I first passed a sound, then irrigated and packed urethra for four inches. He was packed every day for four days, then every other day for a week, when he was dismissed. The discharge ceased the third day.

Case 4.—M. W., superintendent, married, health good. Said he had gonorrhea three years previous and supposed he was cured. He had been treated for stricture. He came to be treated for an enlarged and painful testicle, also a like affection of the right inguinal glands. On examination of penis a drop of creamy pus could be expressed from the meatus. Said he had noticed this every morning for three weeks previous. He was packed every day for four days, then packed every other day for ten days, when he was dismissed.

This method of treatment is at once simple and rational and can easily be carried out by any physician who can pass a sound. All cases of gonorrhea, whether acute or chronic, yield promptly to this treatment. The discharge ceases in two to five days, and in ten days or two weeks more the patient is dismissed cured. The antiseptic oiled dressing renders the field unfavorable for germ development and promotes healing of the inflamed mucous membrane. There will be no foul discharge to soil the patient's linen. In all cases I have treated no complications like prostatitis, epididymitis, orchitis or cystitis have occurred, nor have any strictures followed.

EXCISION OF THE GASSERIAN GANGLION.

WITH REPORTS OF TEN CASES OPERATED UPON BY THE HARTLEY-KRAUSE METHOD.

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AND
JAMES M. NEFF, M.D.
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So many excellent articles on all phases of this subject have appeared during the past few years that it seems superfluous for us to consider it exhaustively at this time, especially as little has been added to our knowledge since their publication. We will, therefore, take up only the principal points in the anatomy and pathology of the Gasserian ganglion, the etiology and symptomatology of tic douloureux, the history of the development of the operation for excision of the ganglion, and the modern methods of performing the operation itself.

ANATOMY.

The Gasserian ganglion lies in a depression at the apex of the petrous portion of the temporal bone. It is a small crescentic mass of nerve substance, which appears, after careful dissection, simply as an expansion on the sensory root of the fifth nerve, which enters it at its postero-superior border. Its two chief surfaces are the antero-external and postero-internal; the former intimately connected with the overlying dura mater, and the latter separated from the bone by a thin layer of dura with which it is loosely connected.

Cushing describes, in addition to the thick dural layer covering the ganglion, a thinner fibrous tissue, firmly adherent to its upper surface and binding it and the sensory root to the underlying tissues. If the separation is begun from the front, the dural layer is easily lifted from the ganglion, this thinner layer remaining intact.

The three main divisions are given off from its anterior border: The ophthalmic passes forward and becomes very closely attached to the dura forming the outer wall of the cavernous sinus; the superior maxillary passes through the foramen rotundum, and the inferior maxillary through the foramen ovale, uniting with the motor root after its exit. In the skull the motor root lies beneath and has no connection with the ganglion. The internal carotid artery passes upward in the carotid canal, lying first beneath the ganglion and then to its inner side.

The middle meningeal artery arises from the internal maxillary, passes upward through the foramen spinosum, and after entering the cranium divides into two main divisions, anterior and posterior. It gives numerous branches to the Gasserian ganglion and dura mater in the vicinity, and for this reason, as well as by reason of its close proximity to the ganglion and inferior maxillary division, it is of great importance in the performance of excision.

The relative positions of the foramina at the base differ greatly in different skulls, as do also the bony prominences and depressions which surround them. The most important of these bony projections is found in skulls having a wide basal diameter and is situated just to the outer side of the foramen ovale. In the inferior operations these elevations may cause considerable annoyance in reaching the ganglion, but are of less importance when operating from above. Dollinger, in a series of careful measurements, has determined certain facts in this connection to which reference will be made later.

PATHOLOGY.

The pathologic changes which have been described as existing in excised ganglia are both varied and inconstant, ranging from slight irregularities in the size and shape of the nerve cells and fibers, staining reactions, etc., to the grosser lesions, such as tumors, endarteritis of the vessels supplying the ganglion and marked connective tissue hyperplasia. In some of the specimens there were almost no pathologic findings. The microscopic appearances in those patients previously subjected to peripheral operations may be due entirely to an ascending neuritis, occurring as a result of the operation, and are therefore in no way related to the original lesion. Schwab[1] of St. Louis, in a recent paper, reviewed the literature and reported the results of his examinations of two ganglia removed by Dr. William Bartlett. He describes unequal staining of the nerve cells, irregularity in their shape, atrophy of some cells and pigmentation of others. In one case the connective tissue was greatly increased and concentric bodies were present. He concludes that trigeminal neuralgia is not a definite disease, but "merely the symptoms of various processes affecting the fifth nerve anywhere in its course." He makes two divisions of the affection from a pathologic standpoint: 1. An ascending peripheral neuritis the more common. 2. An interstitial inflammation of the ganglion itself.

Barker[2] found, in two cases, degeneration of the nerve cells, variation in the size and shape of the nuclei, fragmentation of the nuclei and pigmentation of the cell bodies. There was no increase in the connective tissue, and no organic change in the blood vessels.

Spiller[2] describes tumefaction and imperfect staining of the medullary sheaths of the nerve fibers, with evidences of disintegration of the myelin, in the various branches of the ganglia examined by him. Some of the nerve branches were perfectly normal, and the diseased fibers were confined to certain well-defined bundles. The sensory root, too, showed some swelling of the axis cylinders, and numerous open spaces, enough to justify the conclusion that it was not entirely normal. There was no increase in the connective tissue, and no changes in the blood vessels in one case, while in the other some of the small blood vessels showed thickening.

Tumors involving the ganglion are rare, and Dr. Keen could find in the literature but two in addition to his own, one reported by Hagelstam—an endothelioma—and the other by Trénel—a sarcoma. His own case was one of endothelioma upon which he operated twice.

ETIOLOGY.

Tic douloureux occurs about twice as frequently in women as in men, at all ages and usually at or after middle age. Under forty years of age it is found three time more frequently in women than in men, and affects the right side twice as often as the left (Dana). The second and third divisions are most frequently involved, either separately or together, and with or without the first division, which is rarely affected alone.

Victor Horsley gives the following as factors in the causation of the disease: 1. Cold. 2. Worry and overwork. 3. Alcoholic excess. 4. Ostitis of the alveolar borders of the jaws due to dental caries. 5. Rhinitis. 6. Traumatism.

Dana has seen it follow the grippe in one case, and severe hemorrhage in another.

William Rose, in considering the etiology, gives the following pathologic classifications:

I. *Intracranial.* *a.* Cerebral. 1, Sclerosis; 2, aneurisms; 3, tumors involving some part of the large extent of deep origin of the nerve. *b.* Radical. Any inflammatory affection of the sheath of the root. *c.* Ganglionic. Chronic interstitial inflammatory changes causing pressure on the nerve cells.

II. *Cranial.* All morbid processes at the base of the skull and in foramina. *a,* Tumors; *b,* callus following fractures; *c,* syphilitic periostitis; *d,* inconstancy of shape and size of foramina.

III. *Extracranial or Peripheral.* *a,* Dental caries; *b,* contraction of lumina of peripheral bony canals; *c,* exposure to cold or damp, producing perineuritis; *d,* retention of secretion in frontal sinuses; *e,* diseases of ear, nerves caught in cicatrices, impacted foreign bodies, etc.

IV. *Toxic, Reflex and Functional Causes,* as neurotic temperament, worry and anemia, etc.

Probably in the great majority of cases the disease process is ascending, beginning in the peripheral nerve filaments and later progressing to and involving the ganglion. In a few cases, however, probably including those not benefited by an extirpation of the ganglion, the lesion has been central, either in the area of distribution of the sensory root or in the sensory root itself.

Heredity plays no part in the etiology, though in some cases a neurotic family history is obtained.

SYMPTOMATOLOGY.

The term "tic douloureux," according to Horsley,[4] should be applied "only to those cases of severe neuralgia in which the pain is paroxysmal in character, always limited to one side of the face, very often at first to one branch or division of the fifth nerve, and only later gradually invading the other branches; a neuralgia which is accompanied by other evidences of nerve stimulation, in the shape of the secretion of tears or saliva, and vasomotor dilatation of the vessels of the face, according to the branch of the nerve which happens to be implicated, and finally a neuralgia which only in its latest stage is accompanied by any anesthesia or numbness of the parts supplied by the affected nerve."

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[1] Anns. of Surg., June, 1901.

[2] Journ. A. M. A., May 5, 1900.

[4] The Practitioner, September, 1900.

Dana[5] describes two types of trigeminal neuralgia:

1. The migrainous type, occurring in young females, in which the trouble is central and not in the Gasserian ganglion. This type may eventually pass into a true degenerative neuralgia.

2. A second, more common form, occurring after the age of forty, and twice as often in females as in males.

It is with this second type only that we as surgeons have to deal.

The essential symptoms of tic douloureux may, as mentioned above, be classified under two headings: 1, The pain itself, and 2, abnormal conditions of the motor, vasomotor and secretory apparatus.

1. *The pain* is unilateral, usually limited to the second and third divisions, though sometimes involving the first division, and occurs more often on the right than on the left side. It is characterized by periodic attacks of great intensity, alternating with intervals of freedom, the duration of which lessens as the disease progresses and the general nervous tone becomes lowered. At first coming on at intervals of several hours, or perhaps days, in the later stages the paroxysms follow each other every few minutes, so that the patient is in constant agony and frequently becomes deranged mentally as a consequence. The paroxysms are brought on by touching the affected side of the face, sudden noise, draught of air, or the mere attempt at speaking, laughing, coughing or chewing. The character of the pain is described as shooting or darting, and, as a rule, it is most intense at the points of exit of the nerves—the supraorbital, infraorbital or mental foramina. In the later stages it frequently extends to the auriculo-temporal branch and is referred to the entire temporal region. Only rarely does it extend to the opposite side, and when it does the disease is probably central, progressing in a peripheral direction along both sensory roots.

2. *The motor symptoms* may be spasmodic or paralytic, involving the muscles of the jaw, face or head. Accompanying the paroxysms of pain, twitching of some of the facial muscles of the same side is constantly present, most commonly those of the eyelids, alæ of the nose and angles of the mouth.

The secretory symptoms may be either an abnormal flow of mucus from the nose, saliva or tears, and usually occur like the motor symptoms during the paroxysms of pain.

The vasomotor manifestations, which may or may not be present, are: Reddening of the affected side of the face, unilateral perspiration, swelling of the veins, etc. In some long-standing cases a chronic inflammatory hyperplasia of the lips has been observed.

The general health in the majority of cases is not seriously affected, and for years, provided mastication is not interfered with, the patients may remain in good physical condition. Later, when the nervous system has become seriously deranged, and mastication is prevented by the severe pain which it causes, there is loss of flesh and emaciation. Some of these patients suffer from obstinate constipation, and complain that the pain is brought on or aggravated whenever they fail to keep the bowels freely open.

Periods of remission, lasting several weeks or months, are not uncommon, especially in the earlier stages of the disease, but they are always temporary, and the symptoms invariably recur. Herpes along the course of the affected nerve is often seen, usually early in the disease.

PROGNOSIS.

In the great majority of instances of tic douloureux the prognosis is bad unless the radical operation of excision of the Gasserian ganglion is resorted to. The cases go on from bad to worse until finally life is rendered intolerable on account of the intense and almost continuous pain. Medicinal treatment, including castor oil and strychnin, afford at best only temporary relief, and the same may be said of the peripheral resections of the individual nerves and the various injection methods with osmic acid, etc. Many of the patients become confirmed morphin habitués as a consequence of using this drug for the relief of the paroxysms of pain. In the later stages, mental derangement is not uncommon, and, if of long-standing, may persist after the removal of the ganglion.

Dana, as a result of his experience, takes a more optimistic view and has observed complete disappearance of the symptoms without operation in a number of cases, some of them long-standing.

Removal of the ganglion in the great majority of the cases effects an immediate and permanent cure, though in a few, even after this had been done, there was a recurrence of the pain. In most of these, however, there was a reasonable doubt as to the complete removal of the ganglion, and possibly in some the disease was central rather than peripheral in origin.

HISTORY OF THE OPERATIVE PROCEDURES.

The following résumé has been taken principally from the articles of William Rose[6] and Professor Krause.[7]

Neurotomy was first suggested by Albinus and Galen, and first carried out on the infraorbital branch of the fifth nerve by Schlichting in 1748. Neurectomy was first performed in 1793 by Abernethy.

In 1805 Langenbeck described the anatomy of the trigeminus nerve and the nature of the neuralgia, declaring it to be a local nerve lesion and therefore recommending division of the affected nerve as a radical cure.

Masius, in the same year, suggested that the treatment be directed to the cause of the disease. In 1822 Klein crushed and cauterized the central end of the divided nerve; Boyer the peripheral end; Middledorff, Bardeleben and others divided the nerve directly with the galvano-cautery, and Malgaigne split one or both ends and turned them back in a loop.

In 1832 Delpech called attention to the fact that when the neuralgia was due to disease of the nerve or sheath, resection would not cure it, as reunion of the divided ends would take place. The operative treatment fell into disuse in the forties, and very few surgeons advocated it.

In 1852 and 1853 Roux and Sedillot again recommended operative procedure, and since then records of peripheral operations have been very numerous.

Von Bruns, in 1859, and Wagner, in 1869, reported many operations in detail, and proposed improvements on existing methods. The statistics of Weber, 100 cases with 18 cures, and Wagner in 1869, 135 cases with 18 cures, after three years, show the relief of pain by these peripheral operations to be only temporary.

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[5] Jour. A. M. A., May 5, 1900.

[6] Lancet, Jan. 9, 23, and Feb. 6, 1892.

[7] Die Neuralgia des Trigeminus, 1896.

Stromeyer in 1864 opposed operation and advocated medical treatment, especially oleum ricini.

Removal of large sections of the nerve was first advocated by Braun, who suggested as a means of treating the infraorbital branch that it be divided both at the foramen rotundum and the infraorbital foramen, the intervening portion being entirely removed by traction. M. Beau applied the same method to the inferior dental branch, and Thiersch extended it to all branches of the fifth.

Vogt, in 1876, first applied nerve-stretching to the trigeminus; this method had been used previously in the case of other nerves by Nussbaum and Hauser. It, however, proved to be of even less value than the other peripheral operations, and was soon abandoned.

Krönlein's temporal method, of resecting the second and third divisions at the base, was developed from the procedures of Lücke, Braun and Lossen, described in 1884. It consists of six steps, and the deep field was exposed by a ∩-shaped skin incision, with its base on the upper edge of the zygoma, and resection of the zygoma itself.

In Kocher's method for resection of the superior maxillary division the antrum of Highmore is opened. The nerve is exposed through the floor of the orbit and torn or cut at its exit from the foramen rotundum.

Gussenbauer reported a similar operation to the German Society of Surgeons in 1892. The pterygo-maxillary operation of Professor Lücke, designed to reach the superior maxillary division, consists of resecting the zygoma and turning it upward, dividing and turning down the masseter muscle, dissecting in front of the temporal tendon to the sphenomaxillary fossa and dividing the nerve at the base.

Braun and Lossen modified this operation by detaching the temporal fascia from the bone and turning the zygoma downward with the masseter.

Pancoast dissected upward a triangular flap of skin and masseter muscle, with base at the zygoma, thus exposing the temporal tendon which was detached from the coronoid process and the latter removed. The insertion of the external pterygoid was then divided, and the third division reached at its exit from the foramen ovale.

Salzer recommended section of the third division at the base; a curved incision with convexity upward; division of the zygoma at either end; transverse incision through the temporal muscle just above the zygoma; retraction downward of the muscle and bone, detachment from above downward of the fibers of the temporal muscle, and external pterygoid from the temporal bone until the foramen ovale was reached.

Krönlein modified Pancoast's operation by dividing the zygoma in front and behind and retracting it downward, after which he divided the coronoid process and turned it upward.

The retro-buccal method of Krönlein is for the purpose of exposing the third division at the base, and by it the lingual, inferior dental, buccinator and auriculotemporal nerves can be followed to the base. It is accomplished by an incision extending from the angle of the mouth to the lobule of the ear, resecting the coronoid process and so reaching the base where the nerves are to be cut.

Kocher's operation for resection of the inframaxillary nerve is performed as follows: An incision is made, beginning behind the anterior portion of the malar bone, and extending backward to below the posterior part of the zygomatic arch, then upward and backward down to the bone. The zygoma is resected and turned downward and the temporal muscle retracted forward. The periosteum is now retracted from the base to the foramen ovale and the nerve resected.

Rose recommended the method of Horsley, by which the sigmoid notch is deepened by trephining and cutting with the bone forceps, the external pterygoid muscle retracted through the notch, and the foramen ovale found by tracing upward the third division.

INTRACRANIAL OPERATIONS.

This brings us to a consideration of the intracranial operations which have been devised for the relief of tic douloureux, and these may be of three varieties: *a.* Intracranial division of one or more of the branches of the trigeminus, between the ganglion and the foramina of exit. *b.* Removal or destruction of the Gasserian ganglion. *c.* Division or resection of the sensory root between the ganglion and the brain. Of these the removal of the ganglion is the best and most satisfactory and the one most frequently performed.

J. Ewing Mears of Philadelphia, in 1884, first recommended the removal of the Gasserian ganglion in cases of severe trigeminal neuralgia, and William Rose of London, on April 2, 1890, was the first to perform the operation. In this case the superior maxilla was resected and the foramen ovale reached from the front. The pain had not recurred two years after the operation, but the eye on the operated side was lost.

Horsley reached the ganglion by an intracranial operation in which a large temporal flap was turned down and a corresponding area of the temporal bone removed with trephine and bone forceps. The dura mater was divided along the whole length of this opening, the temporo-sphenoidal lobe held up and the position of the sensory root ascertained. Incision of the dura over the ganglion was now made and the ganglion removed. Horsley performed this operation only once, the patient dying seven hours after the operation from shock, but in two other instances he made by its means an intracranial division of the nerve. Horsley resected the second and third divisions intracranially from below by a modified Pancoast-Salzer operation, making a temporal flap with the base at the zygoma, dividing the zygoma at its two ends and turning it with the flap downward, removing the upper part of the coronoid process with the lower portion of the temporal muscle, and finally exposing the base by retracting the external pterygoid muscle. The base was trephined between the foramen ovale and foramen rotundum, and the nerves resected intracranially.

Rose's second method, first performed by him in January, 1891, was as follows: Skin incision backward along the zygoma, down in front of the ear, and forward along the horizontal ramus of the jaw; the skin flap was dissected forward, the zygoma divided at its two ends and displaced downward and backward with the masseter, the coronoid process thus exposed was divided, and with the temporal muscle retracted upward. The internal maxillary artery was now ligated and the external pterygoid muscle detached from its origin in the great wing of the sphenoid and external pterygoid plate. The foramen ovale was thus exposed, and the greater wing of the sphenoid trephined just external and anterior to the foramen. Ganglion was now loosened and removed piecemeal or with the curette. The coronoid process was then sutured in place or removed, zygoma adjusted and skin flap sutured.

Dr. Edmund Andrews of Chicago first performed this operation in America, and with success.

Hartley[8] of New York, in 1892, described a method for resecting the second and third divisions within the cranium, which was subsequently and entirely independently described by Krause.[9]

Hartley's first patient was operated on Aug. 8, 1891, and Krause's Feb. 23, 1892. In neither of these operations was the ganglion removed, but the second and third divisions were divided in front of the ganglion.

The first removal of the Gasserian ganglion by this method was performed Jan. 31, 1893, when Krause operated a second time on his first patient. The operation known as the Hartley-Krause method will be described later. Doyen, on March 6, 1893, removed the ganglion.

Tichonowitch classifies the operations for removal of the Gasserian ganglion as follows.

1. Temporal. *a*, Hartley-Krause; *b*, Hartley-Krause, modified by Coelho. Zygoma resected.

2. Sphenoidal. 1. *a*, Rose; trephination of base only; *b*, Doyen and Poirier; trephination of base in infratemporal plane, and inferior portion of temporal fossa.

In these two the route is through the muscles, and in a very vascular territory. The coronoid process is resected in both, as is also the zygoma. 2. *a*, Jacob; provisional resection of zygomatic arch, with outer half of zygomatic bone and adjacent portion of frontal process; *b*, Quénu-Sebileau; provisional resection of zygomatic arch.

In the two latter the route to the ganglion is between the base of the skull and its periosteum, in the territory of the intratemporal plane, that is, external to muscles and vessels.

Of the various operations those of Hartley-Krause and the later method of Cushing, not included in Tichonowitch's classification, are the procedures usually followed by American surgeons.

The Hartley-Krause operation, which we have used exclusively, is performed in the following manner (Krause's original description):

Chloroform anesthesia. The incision is begun just anterior to the tragus, is "uterus-shaped," first extending upward, then forward, and then downward with base of flap on zygoma. The base on the zygoma is 3 to 3.5 cm. wide. and the height in the center 6.5 cm. The greatest width is 5 to 5.5 cm. This incision is through all the tissues down to the base, and is then carried through the bone by means of a circular saw. Sometimes the bone is removed, but it is usually preserved, attached to its periosteum, forming the Wagner flap. In the second step, the dura is separated from the floor of the fossa to the foramen spinosum, and the brain retracted upward only so far as is absolutely necessary. The middle meningeal artery is always ligated, usually with two ligatures, and cut between them. In the third step, the hemorrhage is stopped by packing gauze between the bone and the retractor holding the brain upward. After the hemorrhage is stopped and the retractor is in position, work with the elevator is begun. The third division is first found and exposed, and then the second. The dura is pushed back from these two nerves and from the ganglion, and the three structures are lifted successively from the base.

In separating the dura from the upper surface of the ganglion it may be opened, but this is usually of no importance. The third division is grasped with Péan forceps and lifted upward. The first division is not exposed at any time during the operation except at its junction with the ganglion, because of its position in the wall of the cavernous sinus and its proximity to the third, fourth and sixth nerves.

After isolation of the ganglion, it is grasped with forceps at its junction with the sensory root; the second and third divisions are cut off at their exits from the foramina and the sensory root is twisted out by means of the attached forceps. It is sometimes taken off at the pons. The first division usually tears off close to the ganglion. The ends of the nerves are pushed down into their foramina; the retractor is removed and the flap brought into position. So far the motor root has not been separated from the ganglion in the performance of the operation, but experiments have shown that it may be possible to do it.

The deviations from the typical Hartley-Krause operation which we have resorted to are: 1. The De Vilbiss forceps is used for cutting the bone; 2, the extension of the base of the bone flap to almost one-half inch below the level of the zygoma. This is accomplished with a narrow blunt chisel, cutting the bone in parallel lines about one inch apart. When this division is made the bone is fractured transversely with an elongated Kocher dissector; the osteoplastic flap is then freed, so that it falls over the edge of the zygoma and is held retracted by a suspender of gauze. In addition to this the rongeur is used to remove the bone down almost to the level of the floor of the middle fossa. This gives a very satisfactory field of operation. The dura is then gently separated with the finger and elevated from the fossa until the second and third divisions are exposed as they enter the foramina, beginning in front and passing backward. As soon as the third branch is passed the middle meningeal artery should be looked for. This can now be readily ligated or crushed with the needle-holder, acting as an angiotribe, and cut without ligature. If bleeding follow the foramen can be packed with gauze, or, better, with catgut. This was necessary on only one occasion. The bleeding from this vessel in the early cases in which it was neither ligated nor crushed, was not troublesome.

A long blunt dissector then gently elevates the upper layer of the dura from the surface of the ganglion until its entire body is exposed. At the end of this procedure the dura will be opened and the cerebrospinal fluid will escape into the field. Blunt hooks are then passed under the second and third divisions and the nerves drawn strongly from the foramina. The branches are then divided with the scissors, and both are grasped with a Koenig or blunt polypus forceps, at first gently elevated, and, with the assistance of the dissector, detached from the under layer of the dura. The forceps are then twisted and the sensory root evulsed from its attachment to the pons. The brain is held back with a thin convex tongue depressor. It is compressed but very little, when a large amount of the bone has been removed. The end of the elevator is covered with gauze, which assists materially in controlling the hemorrhage. The wall of the cavernous sinus may be torn, but the hemorrhage is readily controlled by the finger or gauze-covered elevator, as the blood in the sinus has scarcely any pressure.

No effort was made in any of our cases to separate the first branch from the sinus. After the evulsion the blood was removed and the field gently packed with iodoform gauze, the end of which was drawn out at the posterior angle of the wound. In one of the cases it

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[8] New York Medical Journal, March 19, 1892.

[9] Deutsche Gesellschaft für Chirurgie, June 10, 1892, and Arch. f. Klin. Chir., Oct 11, 1892.

who may first be disturbed by marked deformities of the back or limbs or by the child's weakness or inability to stand or walk at eighteen months or two years of age. This slowness in walking is often a fortunate circumstance and one much to be encouraged, since at this early stage walking could only result in a rapid increase of deformity. In the stage of bony softening then it is often of primary importance to keep the child off his feet or to limit walking and standing, whether the predominant deformity be bow-legs, knock-knees or kyphosis. In the latter affection even sitting may be productive of harm, and the prone position for some hours a day may be indicated. The generous use of the perambulator serves the double purpose of bringing the child into the fresh air and keeping him off his feet. Particularly in these non-ambulant cases are massage, frictions with cold water or diluted alcohol and manipulations of the trunk and extremities of service, though they are worthless for the correction of serious deformities. In mild ambulant cases it is often well to build up the outer edge of the shoe in bow-legs and the inner edge in knock-knees, in addition to the friction manipulations and exercises. As the child becomes older and more active, passing a larger part of its time in the open air and better able to assimilate an ordinary mixed diet, the nutritional vice usually subsides, either with or without treatment, and the various deformities of the back and limbs, unless very severe, tend to improve; many of the milder cases are completely corrected. Bow-legs improve more than knock-knees, or anterior curves of the tibia, and rhachitic kyphosis improves oftener than rhachitic scoliosis and pigeon breast.

Just a word as to rhachitic spine, which it is exceedingly important and also exceedingly easy to differentiate from spondylitis. In rhachitic spine the kyphos is rounded, involving many vertebræ, and may be partly or wholly obliterated by lifting the legs and pelvis, the child being prone.

In Pott's disease, in the active stage, there is a sharp knuckle at some point of the line of the spinous processes with muscular rigidity. The characteristic pains are at the sides or in front, and it often hurts the child to be lifted. There are no characteristic pains in rhachitic spine. In spondylitis the children are usually older and are nearly always able to walk. They cry at night and have a characteristic attitude in walking, standing and stooping.

The treatment of rhachitic spine is usually the treatment of rickets with the addition of recumbency or procumbency and massage. Apparatus is rarely needed. As the rickets improve the back becomes stronger, and a perfect recovery may usually be expected. Infantile scoliosis due to rickets requires similar treatment, with some additions, but is much more intractable. In pigeon-breast obstructions to the air passages are to be removed and pulmonary gymnastics employed.

If at one and a half to three years of age a child presents a fairly severe bow-leg or knock-knee, braces exerting a constant correcting leverage on the distorted bones should be worn. In most cases of bow-legs the Knight brace, taking its fixed points at the inner side of the os calcis and the internal condyle, and drawing the tibia over by a lacing to the bar on the inner side of the leg, answers the requirements. If, however, the femur as well as the tibia is bowed, a stiff apparatus should extend to the groin, and the knee and lower thigh be included in the lacing.

For knock-knees in its milder form the stiff Thomas knock-knee splint, making pressure over the outer side of the heel, great trochanter and counterpressure against the inner side of the knee, gives excellent results.

When the bones are too hard or the deformity too great to be corrected by splints, which is often the case after three or four years of age, an operation is to be considered. The classical operations are osteotomy and osteoclasis. Osteoclasis may be manual or instrumental. Manual osteoclasis is applicable in very young cases, when deformity is severe enough to require interference; in those and in all young cases where the rickets is still active, the after-treatment and general anti-rhachitic measures should be strictly attended to. Rapid osteoclasis, as described by Dr. Wallace Blanchard of Chicago, is an excellent operation and leaves little to be desired. The older methods are less neat and precise than osteotomy, and the latter operation, as improved under the modern surgical technic, is preferred by most New York surgeons. While bones have been broken and cut from the time of the ancients, it was not until after the adoption of asepsis in surgery that the cutting operation became a standard one.

At present the osteotome, or double-faced chisel, has displaced the saw, and the operation may be done subcutaneously, the operator never seeing the bone. Under proper technic the operation may be compared to subcutaneous tenotomy in the simplicity of the method and the certainty and precision of the results. Osteotomies for knock-knee involving the knee joint are unsatisfactory and unnecessary and have been abandoned.

For a knock-knee the femur is chisled a finger's breadth above the internal condyle (McEwen), or above the external condyle (McCormack). The only appliances needed are an osteotome with a cutting edge three-eighths of an inch wide and a sandbag. The patient having been properly prepared and anesthetized, an assistant holds the knee firmly against the sandbag in the semiflexed position and with the outer or the inner side uppermost. The operator having selected the point of entrance, and bearing clearly in mind the anatomy of the parts, guards the osteotome with his thumb and forces it down to the bone, keeping the edge parallel with its long axis; having penetrated the periosteum, the osteotome is turned 90 degrees, so that its edge lies across the long axis of the bone, and is driven nearly through it by rapid strokes of the mallet, the position of the osteotome being slightly changed in the plane of the section to avoid wedging and to complete the cut. When the bone, including the outer shell, has been about three-quarters divided, the osteotome is withdrawn, and the fracture completed by hand with a tangible and audible shock.

The deformity is then slightly overcorrected, good apposition being assured by unsevered portions of the periosteum. Though no Esmarch has been applied the bleeding is usually trifling, often but a few drops. The limb is quickly cleaned up, a sterile gauze and cotton dressing applied, and over this a plaster-of-paris spica from the axilla to the toes. This dressing is usually not disturbed for six weeks, and may be followed by a Thomas knock-knee splint or a plaster splint from the ankle to the groin. Suppuration or other accidents are very rare, but unless great pains are taken the deformity may be incompletely corrected or may recur from imperfect application or too early relaxation of the post-operative treatment. In young children it is not safe to dispense with splints for six months or more.

In bow-legs the greatest bowing is oftenest at the junction of the middle and lower thirds of the tibia, and it is here that the section is usually made. The operation is strictly similar to the operation for knock-knees, but simpler, as the tibia is nearer the surface. The bone is attacked on its subcutaneous surface, the shape of the bone and its relation to surrounding parts being borne in mind. The fracture is completed by hand as before. It is necessary to remember that, in cases of bow-legs severe enough for operation, there is a considerable inward twist of the tibia, which causes marked inversion of the feet. When the knees point forward the feet usually turn in 15 to 30 degrees. In order to correct this deformity it is necessary to break or sharply bend the fibula after division of the tibia, to overcorrect the bowing, and also to rotate the lower fragment outward. This is not always easy, and is frequently neglected in practice, and I have in some instances seen poor results from the neglect of this precaution. For bow-legs the plaster splint should reach from the toes to the groin, and if firmly adjusted the patient may walk at the end of a week; in the hands of a non-expert it is better to keep the child recumbent for a month. Careful attention to splinting for some months after the operation is essential to a successful result.

In the past ten years 428 cases of bow-legs, knock-knees and anterior tibial curves in children were submitted to operation at the Hospital for the Ruptured and Crippled. In most of these the operations were double, and in several instances multiple. In 367 cases one or more subcutaneous osteotomies were performed, in 28 cases cuneiform osteotomies were done, and in 12 instances osteoclasis was used. Of the 428 cases, 375 were discharged cured, 31 improved and 1, which was not rhachitic, but a badly united fracture of the tibia, unimproved.

For several years the subcutaneous method has practically always been employed; the cuneiform operation having been abandoned in these cases, even in anterior curves. When the bone is divided by a simple section and allowed to gape apart after correction the space fills up with new bone, and a good result is more certainly and safely attained than when a wedge is removed. It will rarely be necessary to divide the bone at more than one point.

Undoubtedly complications have arisen in connection with this operation, but I have observed none in my own practice, and have been unable to find any record or to hear of any mishaps of any consequence in the experience of the operators at the Hospital for the Ruptured and Crippled in the last ten years.

Mr. Edmond Owen called attention at the meeting of the British Medical Association in 1899 to the subject of ununited fracture of the tibia and fibula in children, relating several cases where union had failed to occur after an ordinary fracture, and if it were not for a large experience to the contrary one might fear this accident after osteotomy. A search through the reports of the Hospital for the Ruptured and Crippled for the last ten years shows but two operations for ununited fracture of the leg bones, both of the tibia, of which one followed a cuneiform osteotomy for a bad anterior tibial curve, the other a manual osteoclasis for a badly united fracture. Both finally united. Two other cases of ununited fracture following cuneiform osteotomy of the tibia in a girl of 3 and a girl of 13 have been observed by the writer. I have been unable to discover in this service a single case of this accident following subcutaneous osteotomy for knock-knees or bow-legs.

This experience agrees, so far as I am informed, with that of the principal operators for these deformities in this country.

CONCLUSIONS.

We may therefore conclude that:

1. Subcutaneous osteotomy of the shaft is a safe and certain operation for the correction of knock-knees and bow-legs.
2. It is nearly always to be preferred to cuneiform osteotomy, osteotomy into the joint (for knock-knees) or operation by the open method.
3. The risk of non-union of bone or other accidents, with asepsis and an experienced operator, are slight, and not increased in rickety subjects.
4. The commonest errors are imperfect correction, especially failure to overcome inversion of the feet, and relapse from improper dressings, or from operating before the subsidence of the rhachitic process.
5. Plaster of paris makes an excellent splint, completely controlling the position of the fragments when properly applied. Plaster or other splints should be worn for some months.
6. Subcutaneous osteotomy may be likened to subcutaneous tenotomy:

a. In its simplicity, certainty and freedom from complications.

b. In the advisability of correction of the deformity at the time of operation, in the facility with which union occurs and gapes are filled up, in the importance of careful and intelligent postoperative treatment, and in the permissibility of locomotion before firm union has occurred, provided the parts are perfectly controlled by splints.

Each is indicated when the structures involved can not be permanently corrected by stretching in a reasonable time, and both mark a distinct advance in the treatment of certain deformities and are worthy of wider recognition.

TREPHINING FOR BRAIN TUMORS; REPORT OF TWO SUCCESSFUL CASES—ONE OF NINE YEARS.*

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Operable brain tumors are rare. Only 6 per cent. of all cases are suitable for operation. In a recent compilation by Haas[1] 122 were tabulated. Permanent successes after operation are rare, even in the experience of such masters in this special field as Horsley, McEwen, Bergman and Keen. Therefore, every case carried to a successful issue is worthy of record. While I have trephined eight times for a supposed neoplasm, I was but twice rewarded by success. In a third case, a syphilitic thickening of the dura equivalent to a tumor formation was found. As a success from a diagnostic standpoint it is equivalent to a successful trephining for tumor. In each of these cases the tumor was in the psycho-motor area, thus again emphasizing the fact that only when in this limited field can brain tumors be recognized with any degree of certainty. My first case was operated on June 28, 1893. After nine years the patient continues well except for a slight paresis of the left extremities and epileptic seizures at intervals of three or four months. The case was reported by Dr. H. H. Hoppe.[2] The following is a short history:

Case 1.—A. L., aged 32 years, admitted to the Cincinnati Hospital, June 1, 1893. Family history negative; patient denies ever having had syphilis, and claims that he had never been sick before. He states that the present trouble began three years ago, with cramps in the left foot and leg, which came on at intervals of a few months. About six months before his admission to the hospital they became more severe and more frequent. The convulsions extended from the foot to the leg, then involved the arm and face. He states that these convulsions invariably began in the foot, and rapidly extended over the entire side, including the face, and lasted for a few minutes. The convulsions are followed by unconsciousness. This lasts for several moments, and leaves a somnolent state for several hours. He states that he has violent headaches and frequent attacks of vertigo. He states that he has never vomited. His mental condition has deteriorated somewhat.

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An examination of the fundus shows a somewhat injected papilla on the left side and rather indistinct margins. The left side of the body, both arm and leg, are decidedly weaker than the right. While in the house the patient had a number of very typical convulsions, which were observed. They began with a spasm of the left toes and foot, which extended rapidly to the upper extremity, thence to the face. Unconsciousness followed. There is a marked weakness of the left arm and leg with increased tendon reflexes. There is no disturbance of sensation. Diagnosis: Tumor in the right foot-center.

Operation, June 28, 1893. Morphia-chloroform narcosis. Horseshoe incision over right upper Rolandic area. A trephine opening, oval in shape and measuring about three inches in length by two in width was made. There was but little bulging of the dura mater. When the latter was opened the tumor presented itself in the right foot center, extending into the parietal lobe. It was the size of a hen's egg, and readily shelled out. It seemed to spring from the pia mater, and when removed left a clean cavity. The wound was packed lightly, and except for this healed by first intention. Immediately after recovering from the anesthesia there was found a total paralysis of the left arm, and the patient was not able to make even slight movements of the fingers. This, however, was rapidly recovered from.

The patient left the hospital six weeks after the operation, with the wound entirely closed. He has presented himself to Dr. Hoppe from time to time during the last nine years. From time to time he has light epileptic seizures and there remains a slight paresis of the left arm and leg with slight rigidity. In this case the operation saved the life of the patient, relieved his heart symptoms and diminished very markedly the number of epileptic seizures. Although it failed to completely cure him, there is no recurrence of the growth after nine years.

Case 2.—E. O'B., aged 30, single. Father living, mother died of heart disease. Five years ago the patient suffered from pulmonary tuberculosis, which was manifested by hemorrhages, infiltration of the left apex, and the presence of tubercle bacilli in the sputum, evening rise of temperature and loss of weight. He was referred to Dr. J. T. Whittaker, who treated him with tuberculin. He recovered entirely from the pulmonary tuberculosis, and followed his vocation, that of a traveling salesman.

On Jan. 29, 1901, while eating, there was a sudden twitching of the lip on the right side followed by a twitching of the right thumb, index and middle fingers. The entire arm was drawn upwards and backwards and then he lost consciousness. A second attack occurred as he was closing his satchel. This time it began in the fingers, which seemed to clutch the satchel; the arm and shoulder were then drawn up and he again lost consciousness. I saw the patient shortly after this attack, and his description thereof was very clear up to the moment of the loss of consciousness. How long the unconsciousness lasted he is unable to tell. A third attack came on July 20, and a fourth one August 20. When seen about this time by Dr. Zenner, slight attacks of a different character developed. Sometimes they consisted of only a peculiar sensation of numbness in the thumb; again, there was a stinging sensation in the thumb, index and middle fingers. More rarely there were also slight clonic spasms in these fingers. Sept. 14, 1901, he had a paroxysm of clonic spasms of the right side of the mouth, beginning in the lips, and of the hand and arm, followed by a general convulsion. After consciousness returned, he suffered with very slight headache and a sense of prostration, which continued for several hours. Aside from this he never had headache and has not vomited. His mind has been as clear as ever. The patient's general condition is good, although he has lost about twelve pounds in weight since his first attack. Pulse a little more rapid than normal, tongue slightly coated. Bodily functions otherwise normal. Urinalysis negative. Heart and lungs normal. The pupils, optic-discs, the movements of the eye, vision, hearing, knee jerks and plantar reflexes are entirely normal. Patient speaks of a constant numb feeling in the tips of the fingers of the right hand, but a careful examination of tactile pain, muscular and stereognostic sense, reveals no impairment. He speaks of objects often dropping out of his right hand. Dynamometer indicates right hand 69, left 66. Percussion over the skull elicits no tenderness.

On the suggestion of Dr. Zenner, the patient was placed on the bromid of potassium, in 15-grain doses. This treatment was continued during three months, during which the patient had no convulsions. When seen by Dr. Zenner, November 11, the patient had no convulsions, though he had not infrequent peculiar sensations for a short time in the lips and fingers on the right side. There were still no symptoms of increased intracranial pressure. No headache, vomiting or optic neuritis. There were now slight symptoms of paresis. The right thumb and index fingers were weaker than the left. There was slight paresis of the right side of the mouth. In speaking there was more movement on the left side of the face, and when the patient forcibly compressed his lips they were more easily separated on the right side than on the left. After the discontinuance of the bromids the convulsions soon recurred. They began as in the previous attacks with a twitching of the lip or of the thumb and index fingers. They recurred at intervals of four or five days. Clonic spasms in the fingers and mouth appeared very frequently and a decided paresis in the former was easily recognized. The patient was unable to write without great difficulty and could not fasten a button, although the sense of touch was unimpaired.

Notwithstanding the entire absence of the general symptoms of brain tumor, the focal symptoms were so characteristic that the diagnosis of brain tumor was made, and from the previous history of the case, it was believed that a conglomerate tubercle would be found. The patient was examined about this time by Dr. H. Hoppe, who concurred in the advisability of an operation.

Operation, Good Samaritan Hospital, Feb, 11, 1902. Large horseshoe-shaped incision over left psycho-motor area with its central point over the middle of the Rolandic fissure. Trephine opening enlarged with rongeur forceps to limits of the incision in the scalp. The bleeding was very profuse from the diploë, but was easily arrested with bone wax, except for a very free hemorrhage from a large branch of the temporal diploic vein, which could only be checked by blocking it with a sterilized toothpick. The dura presented a normal appearance but was devoid of pulsation. The opening in the skull was three and one-half inches long, and three inches wide. Temporary sutures of silkworm gut were used to close the wound.

Second operation, February 14. This was begun without anesthesia. The wound was easily opened. The dura now presented a feeble pulsation. It was opened by a horseshoe incision. A flap with base below was formed and reflected toward the temple. While the cerebral convolutions did not bulge into the wound, inspection and touch failed to reveal anything abnormal. The patient was now brought into a sitting posture. This so allowed the brain mass to recede that palpation beyond the wound margins was made easy. A distinct induration was thus made out beneath the ascending frontal convolution. The operation thus far had been almost painless. Chloroform was now administered. With rongeur forceps the cranial opening was enlarged. The convolution over the indurated space presented a normal appearance. Except for the abnormal size of the pial vessels. The ascending frontal convolution was incised. Perhaps half an inch below the surface a tumor was exposed and easily shelled out. Its position was such that its narrowest part presented toward the cortex. Its long axis was inclined backwards and inwards through the corona radiata and toward the ventricle. The hemorrhage while free was easily controlled by pressure. One cortical vein required tying. The opening in the dura was closed with fine silk and the external opening closed by interrupted sutures, a strand of silkworm gut being left for drainage. The center of the flap was buttonholed, and through the opening a gauze tampon was lightly placed against the dura. The patient recovered promptly from the operation. The first dressing was changed on the tenth day, when a complete primary union had taken place. During two or three days after the operation there was a slight paraphasia, and an inability except with great effort to move the right hand and forearm. Within a week the muscular control had been largely regained.

An examination of the tumor, made by Dr. Wolfstein, showed it to be a solitary tubercle, with the usual number of giant-cells and the degenerating area which take the stains badly.

Subsequent History.—Three and one-half months have elapsed since the operation. The patient has gained fifteen pounds in weight. He has had no convulsions of any kind since the operation. The numbness has entirely disappeared. There still remains a decided weakness of the flexors of the thumb, index and middle fingers. I would be tempted to use Faradization were it not for the experience of Heidenhain, whose patient went into a Jacksonian convulsion while the current was applied. He believes that perhaps this was the exciting cause of the general epilepsy which followed. Although there has been no indication of a convulsion in the second case, I have placed the patient for one month on the bromid of potassium, intending to keep it up for several months. The patient can neither write nor fasten a button.

The case just reported presents many interesting facts from the view points of diagnosis and treatment. The general symptoms of brain tumor were altogether absent. Nevertheless, when the skull was opened the absence of dural pulsation indicated an increased intracranial pressure which was relieved by the trephining alone. After three days the pulsation of the dura was normal. The tumor when removed displaced 12 grams of water, a mass pressure to which the brain accommodates itself. Much larger growths develop without the usual pressure symptoms, headache, choked discs and vomiting. Kroenlein[3] recently reported a case in which the operation failed to reveal a tumor. A year later an autopsy revealed a subcortical growth as large as an apple. The symptoms [illegible]. Similar cases are recorded by [illegible][8] In the former the operation [illegible] umor. Death developed in three months. In the left centrum ovale a tumor was found 9 cm. long and nearly 7 c.c. wide. There were no compression symptoms at the time of the operation, notwithstanding the large size of the growth. The value of general symptoms in the diagnosis of cerebral tumors is shown by a statement of Bergmann's,[6] that to make the diagnosis of a cerebral tumor without the existence of headache as the most prominent of them is always venturesome (gewagt). Cases like the second recorded, and they are not rare, go to show that the diagnosis is indeed most easily made while the symptoms are altogether focal; while they are still unmasked and unaffected by increased intracranial pressure. With the development of the latter the value of the focal symptoms decreases, since both pressure and irritation symptoms seemingly focal are very common as a result of increase of intracranial tension (fern-druck). This explains the frequency of failure to find a tumor when seemingly unmistakable localizing symptoms are present. Against 104 cases in which operations were successful as to finding and removing a growth, there are 157 in which the operation was unsuccessful in one or other regard. The proportion of negative results is doubtless greater than even these figures indicate. Of eight trephining cases I was successful in three. Bergman in the Moscow Congress conceded four negative results to one positive. He has since, however, reported five cases in which the search was followed by the finding of a tumor or cyst.

An examination of the relevant literature discloses the fact that subcortical tumors particularly often escape attention. In the second case presented, nothing of the tumor was found when the dura was opened. By placing the patient in a sitting posture the brain receded to such an extent that palpation was permitted far beyond the limits of the cranial opening. I am sure that if this point is remembered by operators subcortical tumors can often be recognized that would escape detection without it. If, as in a case recently reported by Bramwell, the small tumor is situated an inch and a half beneath the cortex, even this postural aid may fail to locate the growth. That the tumor was subcortical was inferred by Dr. Zenner, from the fact that even the first convulsion was followed by complete unconsciousness. Furthermore, the entire absence of headache or of tenderness on percussion and of percutory changes spoke for the noninvolvement of the dura and cortex. The operation in the second case was performed in two sittings, as advised by Horsley and Keen. In the other cases in which I adopted the method the opening of the dura and the search for the neoplasm was done under cocain. There was no shock from either operation. If, in the second case reported, an enlargement of the opening in the skull had not been necessary, the second operation would have been completed as it was begun, with local anesthesia.

In the statistics of Haas already referred to, 122 operations, successful as regards the removal of a tumor, present a mortality of 61 per cent. A large share of the death rate is ascribed to shock and hemorrhage. With the more general adoption of the operation in two sittings this mortality will doubtless be decreased. In the two years, 1900-1901, Bergmann operated on four tumors with three deaths directly due to operation. One from sepsis, one from uncontrollable hemorrhage, the growth being an angioma. In two other cases of cyst the operation was successful. Bergmann operated on all cases in one sitting. Whether or not the hemicraniotomy, the opening of the skull with the large trap-door method, contributes to this large mortality of the operation is a subject still *sub judice*.

The statistics of Hale, White and Bernart, quoted by Seguin, show that tubercular growths are nearly twice as common in the brain as any other type. In 23 per cent. of all cases the tumor is tubercular in nature. Of the cases subjected to operation the percentage is much smaller. Of the 122 cases tabulated by Haas, only 12 of the tumors removed were tubercular. This discrepancy between the proportion of tubercular growths of brain tumors in general and the number found by operation is readily accounted for by two facts. First, these tumors are often multiple, as in a case recently in the service at the City Hospital, where the multiplicity of the tumors necessarily increased enormously the difficulties of localization. Second, tubercular tumors, because of the infectious nature of the underlying disease, have been thought to be unfavorable for operation, because of their tendency to recur.

Two years ago Bergmann held the solitary tubercles are ordinarily not suited for operation. In a very interesting paper published by A. Preyer,[9] from the clinic of Roux of Lausanne, are collected all the cases of brain tubercle operated on up to that time. There were 16. One case has since been reported by Heidenhain.[7] The case above presented makes the eighteenth. Three patients died as a result of the operation. Six patients survived a number of months. Two patients died a number of years after the operation. A case of Czerny's lived four years and two months. A case of Horsley's died seven years and eight months after the operation of tuberculosis of the spine. So far as can be learned there are now living four of the cases operated on for solitary tubercle of the brain. Two cases of Roux, the one above reported and one of Kroenlein's, the latter living six years after the operation. Although these data are far from brilliant, they militate against the dictum of Bergmann above alluded to. When it seems certain that the tubercle is solitary and unaccompanied by changes in the meninges as made manifest by lumbar puncture, an operation is followed by the three-year limit of recovery in over 25 per cent. of cases, the justification of operation for brain tubercle seems thoroughly established.

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SOME FACTS ABOUT VACCINATION.*

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Owing to a lack of exact knowledge from absolutely reliable sources on the subject of vaccination, there is a good deal of misapprehension in the public mind as to the efficacy of vaccination as a protection against smallpox, and the constant inquiry is made: "When shall we vaccinate?" "How long does it protect?" and "How often should we be vaccinated?" Many members of the medical profession, busy with other things to do and not compelled to face the epidemic horrors of a hundred years ago and not exact in their knowledge on the subject of vaccination, have a halting, uncertain, confused state of mind on the subject, which goes far to create doubt in the public. There are doctors, and good ones, too, who have had so little experience with vaccination that they do not know what constitutes a successful vaccination. I visited a neighboring town where a reputable physician of unquestioned ability told me he had a case of what he believed to be smallpox in a child he had vaccinated six weeks previous with a typical result. With the doctor I visited the child, found smallpox present, but absolutely no evidence of vaccination. There had been a scarification—too deep and too large—a black scab and a sore, but no vesicle, no febrile reaction and no scar. Had not some one who knows a vaccination seen this child the story would have been published to the world that a child had smallpox who had been vaccinated six weeks before the attack—a circumstance that never occurred and never will occur. Within a year there have been cases of smallpox reported by doctors as having occurred in persons after a recent vaccination. I am perfectly satisfied in my own mind that such cases are either chicken-pox, mistaken for smallpox, or more frequently the supposed post-vaccinal victims are not vaccinated at all, but have sore scarifications which are mistaken for and put down as vaccinations.

Many physicians not familiar with the glycerinated lymph had read that the new lymph produced results less severe than that produced by the "points" they had formerly used; secured spurious lymph from an active, enterprising firm and mistook the mild or severe sore, as the case might be, caused by the scarification and sometimes extraneous infection, for a true vaccination. This inert lymph even in the hands of competent doctors has caused doubt and confusion in the minds of many as to the efficacy of glycerin lymph, and has also caused to go on record cases of smallpox in persons supposed to have been recently vaccinated. Thousands are now relying on a false security produced by the use of this inert lymph. Dr. F. J. Runyon of Clarksville, Tenn., based his paper condemning glycerin lymph almost wholly on this firm's inert product. Dr. Runyon says: "Ninety to 95 per cent. of those vaccinated in 1900 with this lymph are still liable to smallpox." This is a fruitful source of error in the records against vaccination which should be eliminated. Inasmuch as I have evidence that this firm is producing potent lymph now, I need not mention names.

Another source of error is that it has been customary to record as vaccinated persons vaccinated after exposure to smallpox. This is now done in London, England, and the blunder has been pointed out by the British medical journals.

The report comes from London, England, that half the persons dying from smallpox had been vaccinated. I care not where such statements come from, they are not true. Such a statement means that the records are not made from facts; that they are perpetuating the old errors, taking the patient's word for fact and recording cases as vaccinated who were never vaccinated until after exposure. I have had reputable physicians tell me that they have had typical vaccinations with no resulting scar. Such a result is not to be relied on as protective. Revaccinate all such and another source of error will be eliminated. A successful vaccination may be known by the presence of vesiculation, umbilication, pustulation, mild and limited inflammatory area with febrile reaction. In about twenty days from the beginning of the vesicle the resulting scab comes off. This leaves a characteristic scar unlike that produced by any other agency. This refers to a typical result only. We must look with suspicion on any vaccination lacking these characteristics.

No person is insusceptible to vaccination. That is, vaccinia can be induced at least once in every person. I have known eight, ten, and in one instance—in the practice of the late Dr. Garrott of the Chicago Health Department—thirteen attempts to be made before a successful result was attained. Had Dr. Garrott stopped at the twelfth attempt the child would have been considered insusceptible. It is mischievous and untrue to teach that there is such a thing as insusceptibility to vaccinia.

In some persons one vaccination will protect for a lifetime, but in many cases the protective influence will be partly lost in from five to thirty years. It will protect against death from smallpox long after it has ceased to protect from smallpox. It is not claimed now that one vaccination gives immunity from smallpox for life, though it often does. In most persons two vaccinations are all that will take, once in childhood and once in later life. By experience it has been found that there are comparatively few people in whom vaccination will take more than twice in the course of a lifetime.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Hygiene and Sanitary Science, and approved for publication by the Executive Committee: Drs. Arthur R. Reynolds, George Cook and Heman Spalding.

One scar, I believe, is as good as several, unless the scars are made with an intervening period of time. When a vaccination is made the resulting reaction in the human economy is systemic, and one point of inoculation is as efficient as several. This was the belief and teaching of Jenner himself. When smallpox has been inoculated at one point the resulting disease gives the same immunity as does a multiple inoculation. and the same is true of other epidemic diseases. The figures produced to show that persons with multiple vaccination scars are better protected from smallpox than those with but one scar do not take into account that some of these scars, where more than one exists, were not made at the same time, but were from revaccinations at a later period.[*]

My own observation on vaccination in relation to smallpox, begun in 1893 and continued to the present time, leads me to believe that vaccination is more certainly protective against smallpox than the figures of most of the records we get will warrant. The fault of most of these records is that they are based on the statement of the patient that he has been vaccinated. An examination of the arm will disprove this statement in a majority of instances. The records are often made by the nurse who accepts the patient's word as fact. Anyone who has had experience with smallpox knows how unreliable the patient's statements are. Ask a hundred patients if they are vaccinated and nearly every one will say yes. Examine their arms and tell them you see no mark, and they will reply that they were vaccinated but that it did not take. Of course, this is no vaccination at all. To most persons a vaccination and an attempt at vaccination is the same thing. People say they have been vaccinated whether the operation is successful or not. Had we not examined the arms of the 591 cases of smallpox in the Chicago Isolation Hospital, but taken the word of the patient for the vaccinal status, more than half of them would have been recorded as vaccinated. And again, any scar at the site of an attempt at vaccination has been recorded as a vaccination.. We have done this at the Chicago Isolation Hospital so as to be fair and avoid the charge that we were manufacturing statistics, though we feel sure some of these are scars from infection and not from vaccine. Again, recording, as before mentioned, cases as vaccinated who were vaccinated after exposure, but too late to prevent the disease, have worked injury to the truth about vaccination. A close examination of all arms by experienced physicians will eliminate these sources of error which, in the past, have been recorded as truth, to the great detriment of accurate information on the subject of vaccination.

I do not hesitate to say that vaccination repeated till the susceptibility to vaccine is exhausted is an absolute protection against smallpox. This is the protection given the employes in the Chicago Health Department while they are handling and nursing the sick and burying the dead from smallpox, and in no instance has any of these thus employed contracted smallpox. This is the protection given the 3,200 policemen of Chicago, who, next to the employes in the health department, are the most exposed to smallpox of any class in the city. No case of smallpox has occurred among the policemen of Chicago in the ten years I have been in the health department. Vaccination on entering the school, and again seven years later, is the protection from smallpox given the 265,000 school children of Chicago, and in ten years but 7 cases of smallpox have occurred among the school children, and all of these children were in school with a false certificate of vaccination. In one instance last year a child in school with a false certificate attended school two weeks while he had a mild form of smallpox and but one child in the school took the disease, and this child also was in school with a false certificate. No vaccinated school child in the Chicago schools has had smallpox during the last ten years. though Chicago suffered a severe epidemic of smallpox in 1894 and 1895, and has had a mild, almost continuous epidemic of the disease for the past three years. During the last two years more than 600 medical students have been permitted to enter the Chicago Isolation Hospital for the purpose of studying smallpox at the bedside, where they were thoroughly exposed to the disease in all forms and stages. Not one of these students contracted the disease. Before permitted to enter the hospital each student was required to have a vaccination, and if the vaccination was more than a few months old, three revaccinations. I offer the experience of these students as proof that vaccination with revaccination gives absolute protection from smallpox. I never saw nor heard of the vaccinated members of a family having smallpox while the unvaccinated members of a family escaped the disease. Scores of times I have sent all the unvaccinated members of a family to the hospital sick with smallpox while all other members of the same family who were vaccinated escaped the disease. This is not an uncommon occurrence. I never have seen a case of smallpox in a person who has had a typical vaccination within nine years, though I am aware that it sometimes occurs.

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[*] Since presenting this paper at the recent meeting of the American Medical Association, my attention has been called to the following passages in a "Report on the Smallpox Epidemic in Illinois, 1881-1883, and the Relations of Smallpox and Vaccination," by Drs. John H. Rauch and F. W. Reilly, and published in the Fifth Annual Report of the Illinois State Board of Health, pp. 211-520. The writers say (page 495): "As to the number of insertions which should be made there is some diversity of opinion. The English and continental practice, or wherever arm-to-arm vaccination is the rule, is to vaccinate in several places—four or five, or even more—and often on each arm. It is probable that the custom arose out of the desirability of securing as many vesicles, which could be tapped, as possible, and that the question, originally, had an economic rather than a protective importance. *Jenner's early rule* was to make only one insertion; but as he laid much stress on the necessity of preserving the vesicle intact throughout all its stages, it became necessary to multiply the number of vesicles in order to procure a supply for the arm-to-arm process. Subsequently, the oft-quoted table of Marson, supplemented by that of the London smallpox hospitals and one by John Simon, seemed to establish a connection between the number of vesicles and the protection conferred. On the whole, however, there is reason for believing that the quality of the vaccination is of much more importance than its quantity, as measured by the number of vaccinal scars. It is at least certain that the first vaccinations performed by Jenner and his immediate disciples, proved amply protective, although they *consisted of single insertions* 'by means of a very slight scratch, not exceeding the eighth part of an inch, or a very small oblique *puncture*.' Jenner, indeed, distinctly says that 'a single pustule is sufficient to secure the constitution from the smallpox; but as we are not always certain the puncture may take effect, it will be prudent to inoculate in both arms, or to make two punctures in the same *arm* about an inch and a half asunder, except in very early infancy, when there is a great susceptibility of local irritation.'" The writers continue: "There is no obvio [illegible] athological reason for the claimed increase of [illegible] ugh an increase in the number of vesicles. [illegible] by Marson, MacCombie and Simon, which are relied on to prove such relation, are more philosophically explained by assuming, as is self-evident, that the chance of obtaining at least one perfect—and, therefore, fully protective—vesicle is increased by the multiplication of the number of vesicles. But this is to confess to carelessness or imperfection on the part of the vaccinator which needs to be corrected by using a blunderbuss instead of a rifle. In the thirty-odd years' experience of the writers, with exceptional facilities for observation, it has been found that post-vaccinal smallpox is fully as frequent, in proportion, among those vaccinated in countries where the rule of multiple insertions obtains, as among those presenting single well-marked cicatrices; and that neither the one nor the *other* is to be relied on to the neglect of revaccination."

From March 9, 1899, to June 5, 1902, there were 591 cases of smallpox in the Chicago Isolation Hospital. Of these 535 never had been vaccinated; 8 had typical old marks made in childhood from 16 to 50 years previous to the attack; 48 had some kind of an old, doubtful or imperfect mark, said to have been the result of a vaccination performed many years before. Not one of the 591 persons had been vaccinated in accordance with the requirements now known to be necessary for protection against smallpox. All patients were carefully examined by three experienced physicians for evidence of vaccination, and the record here given can be relied on as correct. These figures show that over 90 per cent. of the cases came from the few unvaccinated who are either too ignorant, too careless, or too stubborn to avail themselves of the positive protection to be had by vaccination.

I wish to make a plea for a restudy, from original observation by medical men who meet smallpox, of the subject of vaccination in relation to its protective influence. Throw aside the doubtful records. Take the word of no one as to whether he was vaccinated or not. Examine the person for a scar and record the finding. Eliminate all sources of error. A restudy for the accumulation of new and more accurate knowledge will remove the last objection to vaccination. Vaccination is now more broadly accepted than any other one great idea that has obtained hold in the minds of men, not excepting the Christian religion. There are dissenters in religion; there are those who dissent to every proposition under the sun. There will, however, be left no cause of dissention to the virtue of vaccination when the existing evidence is examined and properly recorded.

At the close of last year Chicago was found to be menaced by smallpox which was prevalent in a vast territory surrounding the lower and upper lake-regions. To vaccinate and keep vaccinated the large, floating, lodging-house population was one of the many problems before the health department. Following the policy of the department of educating the people in matters of sanitary importance, "A Vaccination Creed" and a supplement to this creed were prepared, giving correct information on the subject of vaccination for the education and benefit of the lodging-house patrons.

The creed, the outgrowth of experience, was formulated and printed on a card 10x14 inches, and reads as follows:

A VACCINATION CREED.

We, the Undernamed, hereby publicly Profess our firm Belief—based on positive Knowledge, gained through Years of personal Experience and Study of Smallpox and Vaccination—

First. That true Vaccination—repeated until it no longer "takes"—ALWAYS prevents smallpox. NOTHING ELSE DOES.

Second. That true vaccination—that is, vaccination properly done on a CLEAN arm with PURE lymph and kept perfectly CLEAN and UNBROKEN afterwards—never did and NEVER WILL make a serious sore.

Third. That such a Vaccination leaves a characteristic scar, unlike that from any other cause, which is recognizable during life and is the ONLY conclusive evidence of a Successful Vaccination.

Fourth. That no untoward results ever follow such Vaccination; on the other hand, thousands of lives are annually sacrificed through its neglect—a neglect begotten of LACK OF KNOWLEDGE.

ARTHUR R. REYNOLDS, M.D.,
Commissioner of Health,
City of Chicago.

Heman Spalding, M.D.,
Chief Medical Inspector,
Department of Health.
December, 1901.

This creed placard was posted up in all the lodging houses in Chicago. A note at the bottom of the poster informed the reader that further information as to vaccination and smallpox is contained in a supplement to the creed—copies obtainable on the premises. The clerk of the lodging house was well supplied with the supplement circular.

The supplement circular in the form of a four-page folder, 4x7 inches, giving facts and figures about vaccination and the reasons for the existence of the creed, was printed, including on one page the vaccination creed, and distributed by the thousands.

The creed poster and supplement were prepared for a specific purpose in Chicago, but they soon found a wider field of usefulness. Other cities and towns made use of them combating smallpox. Railroads applied for and received for their use the poster and supplement. One railroad posted the creed in each of its 1,200 stations. Managers of mining camps in the Rocky Mountains asked for and were supplied with this poster and supplement. In Chicago the circular was much sought after, eagerly read, believed and its teachings heeded by thousands who, without this knowledge, would have remained indifferent or opposed to vaccination.

DISCUSSION.

Dr. B. V. Hedges, Plainfield, N. J.—I would like to report some experiences we have had in Plainfield which bear on the paper just read, particularly as to the value of vaccination after exposure. One case occurred in one of our tenement-house districts, where there were eight men and women and three children in the household. The patient had been sick for four days before any physician had been called. He was promptly removed to an isolated building where he died the next day of the hemorrhagic form of variola. The inmates of the house were all vaccinated, except one man who made his escape before the doctor could operate on him. The result was that we had no trouble at all with the people who had been vaccinated, but two weeks later the man who had escaped was discovered at Allentown with a malignant type of the disease. None of the people referred to had been vaccinated before. In all of them the vaccination seemed to take, and, as I have said, none of them had the disease. The Allentown case was a most beautiful control experiment.

Dr. H. M. Bracken, Minneapolis—I wish to endorse the paper in its entirety, and have little to say in the way of criticism because the sentiments expressed all through are practically my own. The fact of calling an operation that has not taken a vaccination has lately proved the source of a great deal of trouble. In our own state I recollect an instance of a rather striking character. An epidemic occurred in a little village. A capable physician went out and reported to me that it seemed like smallpox, but that if it was smallpox vaccination did not protect against the disease. That took me to the place as quickly as possible. I asked the physician whether he had seen the arms of the patients or had taken their word for the fact of their having been vaccinated. He said he had taken their word. In the first house I asked the mother of several grown boys as to whether they had been vaccinated. She replied: "No; not that I know of." The doctor said the boys themselves had told him they had been vaccinated. In another household the mother had said the children were vaccinated. Two had smallpox and two had not. I asked to see their arms, and she added: "But these two did not take." In a third case we found a young man who had smallpox. I asked to see his scar, and he showed me a mark on the lower part of the arm. I remarked that it was a funny place to have a vaccination scar, and on examination I found it to be nothing more than the scar of an old boil. These are specimens of the histories we obtained. I have made it a point to ask health officers about cases of reported smallpox after recent vaccinations, and the result is that I have not found any cases where the vaccination had really been successful, though there have been several cases where the disease has followed old vaccinations. In Winona, where the disease was epidemic, the inspector reported that there were only a few cases of smallpox in which there was any evidence of successful vaccination, and in the most recent of these cases vaccination had been performed six years previously. Some of the patients had been vaccinated with some of that very poor lymph that was on the market for a time, and only a very faint mark was left. It was frequently found that one individual who had been properly vaccinated escaped the disease while others in the same household who had not been similarly protected became infected. In my opinion there is nothing more positive than the protection afforded by recent vaccination. Even smallpox itself is not more protective against the recurrence of the disease.

Dr. D. E. Hoag, Brooklyn—I think the point as to many physicians not knowing how to vaccinate is a good one. Five out of ten practicing physicians may be said to be in this position. And what is worse, you have these men sent out by boards of health to perform vaccinations in a wholesale way. Their work is often done in a perfunctory manner, so many cases in an hour, and little attention is paid to asepsis or anything else. The act of vaccination is really a very delicate one and we have much yet to study and learn regarding it. My own experience, although limited to local work, has furnished me many contradictory results. I had a family of patients none of whom had ever been vaccinated. I started in with board of health vaccine. I tried it six times, but got no results. Then the family went to another physician, and it seemed to take all right, the result being that I lost my patients. As to the preparation of the arm, I would like to say a word. I have found some physicians who prepare the arm with bichlorid solutions, which I do not approve of. Others do nothing at all, and yet get good results. It seems to me important that we should at all events make the site of the operation aseptic, and that we should study the technic more than is done.

Dr. H. D. Holton, Brattleboro, Vt.—I should like to have some further information as to the kind of scar that may be relied on to show that a person has been properly vaccinated.

Dr. Spalding—It is very difficult to say what constitutes a typical scar. There should be some discoloration. There should be pitting. The mark should be rather deep; a superficial scar is to be regarded with suspicion.

Dr. Holton—Given a patient about fifty years of age who has not been vaccinated since childhood, would you not insist on a vaccination? Also: will you kindly state how you prepare the arm for vaccination?

Dr. Spalding—You can not be certain. Your best plan is to try it again. As to the preparation of the arm, you can use any ordinary disinfectant. Be sure, however, that the arm is washed with sterile water. I prefer a soda solution followed by alcohol. In regard to technic: about as neat a method as I know is to throw a drop of the vaccine on the arm before scarifying, and then rub it till the arm is red, but without bringing blood. I sometimes find sores as large as a quarter—I remember one case in which it was an inch square. These are altogether unnecessary, and are the things which bring vaccination into disrepute.

Bad Breath.—To remove offensive odors, such as are due to whisky and tobacco, E. J. Kempf (*Indiana Med. Jour.*) asserts there is nothing more effectual than 1 part of hydrogen peroxid in 5 parts of rosewater.

TWO CASES OF RETINAL DETACHMENT TREATED WITH SUBCONJUNCTIVAL INJECTIONS OF SALT SOLUTION.*

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BALTIMORE.

I am aware that in speaking of the treatment of retinal detachment I am telling, so to speak, a story, the ending of which we can all pretty well surmise. But even negative results are helpful in getting at the truth of these matters, and I am not so sure but that they help us quite as far along the road as positive results. It is not necessary for me to review the history of this subject or to recall the fact that the treatment of retinal detachment might well be named failure. I shall go straight to the substance of this communication, then, without referring to the various methods of treating this affection. I have been struck with the results obtained by Dor, Winselmann and others when using subconjunctival injections of a salt solution. I put this treatment to a test in the following cases:

Case 1.—The first case was that of an Irishman who came to the Johns Hopkins Hospital about two years ago. I found that his right eye had useful vision and that a cataract had been removed from his left eye. This operation had been apparently successful, but he had not retained vision longer than three months when detachment of the retina occurred, and this condition he had endured for eighteen months when he came under my care. With the exception of a triangle embraced between say 105 and 165 degrees with its apex almost touching the optic nerve the retina appeared entirely detached. He had light perception and nothing more. I put him to bed on April 20, 1900, and on that day gave him his first hypodermic injection of a syringeful of normal salt solution. The injection was made as far as possible behind the corneal border. A compress bandage was then applied. The next day there was some redness near the point of the injection. He had experienced no pain. This treatment was kept up for a week, the injections being made every other day. During the second week a solution of the strength of six grains to the ounce was employed. The third week the solution was strengthened to ten grains, the fourth week to fifteen grains and the fifth week to twenty grains to the ounce. The injections, as usual, were given every other day. After the first week there was always a marked reaction which increased objectively and subjectively in proportion to the amount of salt in the solution. During the third week the pain was severe and lasted for an hour after the injection. During the week when the solutions were of the maximum strength the pain lasted for several hours and the conjunctival congestion was very intense. The patient was never allowed even to sit up. An ophthalmoscopic examination made at this time showed the retina in place but, with the exception of the triangular area which was originally attached, no part of the fundus gave back a clear red reflex. He could now count fingers at two feet. It was my intention to persist in the treatment, using each week a stronger solution, but he declined to remain inactive any longer and he left the hospital at the commencement of the sixth week.

Case 2.—The second case was a particularly favorable one for testing the value of the treatment. J. L. T., forty-one years old, came to me on June 2, 1901, with the report that the day before he had noticed a veil pass suddenly across his sight and since then he had only been able to see indistinctly things above the level of his own head. Examination showed a detachment of the retina which, roughly speaking, took in more than the upper half of the retina. This condition had occurred the day before, but four days previously he had been troubled with a dimness of vision in the eye. He had a myopia in this eye of about five diopters. It is rather interesting in this connection to note the fact that he had consulted an optician ten days previously and had been given a pair of glasses to wear for reading. The right glass was concave 6.50 and the left was convex 1.50. When he first put these glasses on he had experienced intense pain in his myopic eye. He was told, however, to persist in wearing these glasses, which he did. The dimness which has been mentioned then appeared and culminated in the almost complete loss of vision, which was shown to be due to a detachment of the retina. He was put on his back the next day and exactly the same treatment was followed as in the first case. In this case the patient invariably suffered considerably after the injection and he was never able to stand a solution stronger than fifteen grains to the ounce. Once an injection of a twenty-grain solution was given and he suffered all that night. In two weeks I found that he could readily recognize every one in the room and that he could tell the time by his watch. The treatment was kept up for five weeks and all this time he was kept in bed. At the commencement of the sixth week I took him to my office and found that his vision was over 20/40ths with —5 Ds and that the retina was everywhere attached. For obvious reasons I did not attempt to make any lengthy subjective test. This condition remained for two weeks when the weather, becoming intensely hot, he was allowed to go to the country. This was the first week in August. Three weeks later he wrote me that his blindness had returned, brought on, he thought, by a long ride over rough roads on a fishing trip.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

He came back to the city and I found the detachment pretty much as in the first instance. He was put to bed and every other day a syringeful of salt solution (fifteen grains to the ounce) was injected beneath the conjunctiva. In two weeks his vision was about where it was before he had gone away. This condition, however, did not persist, for from now on his sight grew steadily worse and by the first of October had gone back to the first stage of the affection. He refused to stay in bed or to have any more injections made, as he was unable to lose any more time from his work and had about made up his mind to get through life with one eye. At no time during his trouble had he been allowed to use his other eye for reading. I saw this patient last week, a little over a year since the trouble occurred, and there is practically little difference in the condition now from what it was when he first came under my observation.

It will be seen from this that the treatment in both cases was beneficial. The tendency of the method seems to be to do good. The marked local reaction which invariably occurred must be regarded as an advantage, acting probably as a revulsive and producing pretty much the same effect as the punctate cauterizations described by Dor and others. On several occasions the congestion and edema persisted for days, and there was often considerable tenderness in the region of the injection. The last case being a fresh detachment offered a particularly favorable opportunity for testing the value of this method, and while the immediate effect of the treatment was to restore vision, this effect was transient. The importance, then, of withholding from publication glowing accounts of cure in this class of cases is perfectly evident. At least a year should elapse before a just estimate can be made of the value of the treatment. It is almost certain that rest in bed played a conspicuous part in the improvement. Speculation as to the manner in which subconjunctival injections act in these cases seems to me superfluous.

The technic was as follows: The speculum, fixation forceps and hypodermic syringe were boiled five minutes before using. The salt solution was boiled in a test tube three minutes, so also the cocain. A compress bandage was applied immediately after the operation, and kept on all the time. When the reaction was intense a pad moistened with a solution of lead and opium was placed over the lid and the bandage applied as before.

DISCUSSION.

Dr. C. R. Holmes, Cincinnati—About four or five years ago I had the pleasure of seeing Deutschmann's results in his operation for detachment of the retina. I saw the cases when the process of healing had taken place and the retina had reapplied itself, and I saw cases that came to his clinic that had been operated on a considerable time before. I was impressed with the operation and ordered a complete set of his instruments. Previously, I had sent a case there and the patient stayed four or five months, but did not do well, cataract developed and it was not a satisfactory case. I have tried it in four eyes, but have not had any very brilliant results. Last summer I asked Deutschmann if he could suggest anything and he said we should make the cuts more frequently, five, ten or fifteen times, clear through the globe. Injections of vitreous from the rabbit's eye were only resorted to in a few cases.

Dr. Lucien Howe, Buffalo, N. Y.—Last winter I made a few sections of the globe and my attention was attracted to the relation of the lymphatics of the eye to the sheath of the globe. If the injection goes between the globe and the capsule it may have some effect, but if through outside the capsule or in some distant portion of the orbit it might as well be injected into the ear.

Dr. Herman Knapp, New York—One word about the operative treatment in these cases. I have seen only temporary results, with one exception, and that is iridectomy in secondary complications of detachment or its cause. Detachment of the retina may remain partial and may certainly get better in the course of time. In a number of these cases there is an inflammatory basis, which produces mild irritation and when treated it may get better and the eye remain in the state of partial detachment.

I will mention, as proof, one case: a lady with detachment of the retina, first in one eye and then in the other. The first eye had an iritis, which, we all know, is progressive in the majority of cases. She had some sight left and I made an upward iridectomy in order to prevent secondary degeneration. It did very well and now, four years after the operation, she has only partial detachment and she has had no further iritis, or any inflammatory symptoms.

Dr. S. D. Risley, Philadelphia—I have been very much pleased with the conservative tone of Dr. Randolph's paper. I think he states my experience very well when he says the tendency of salt injections is to do good. Dr. Knapp has, I think, struck the key-note in the matter, certainly for cases of detachment in myopic eyes. We should hardly expect any permanent results in these cases of stretched or enlarged eyeballs with their underlying pathologic conditions of the choroid. The salt solution always seems to do good and a number of times I have seen the retina reattach itself, wholly or partially, even in myopic eyes, but always detachment recurs. In one case it recurred, after an apparent cure lasting a number of weeks, during the journey to the hospital on a hot day. I do not remember ever to have seen a permanent cure of retinal separation in high myopia, and in others, only when produced by some traumatism occurring in otherwise healthy eyes.

Dr. E. E. Holt, Portland, Maine—Dr. Risley's experience causes me to rise and say that after Mittendorf read his paper before the American Ophthalmological Society a number of years ago, I had a case that year with very marked detachment, and she had 8 diopters of myopia. I began the injection of pilocarpin and then gave the solution of pilocarpus, a gram to the dose; gave her massage and kept her in bed and the retina reattached itself and her vision returned. That was in '84 and I have seen her nearly every year since. She is a lady who travels and she has never had any trouble since. She reads a great deal, too. I have had several cases of reattachment under such treatment.

Dr. G. E. de Schweinitz, Philadelphia—This subject of detachment of the retina has always been of considerable interest to me and I am inclined to think that Dr. Risley understates his results. I have had good results with the subconjunctival injections by using a weaker solution than has been advocated. I have never used the gelatin, but the physiologic salt solution. The rapidity of reattachment has been a remarkable thing to me. I have always followed the injections by somewhat prolonged massage of the eye. That has seemed to me to promote circulation and the absorption of subretinal products. I use 0.6 per cent. solution with the ordinary hypodermic syringe containing about thirty minims. I have also had the misfortune to see rapid reëstablishment of the original pathologic condition. It seems to me to be the best method recently employed. I have never seen Deutschmann's method used.

Dr. Randolph, in closing—I am glad that Dr. Howe emphasized his point. I stated in my paper that the injection was made as far back as possible and obliquely downwards. The anatomic conditions suggest such a course. I do not think we should withhold treatment no matter what the pathogenesis. The treatment seems to be harmless and there is a general tendency to do good. I would like to have Prof. Haab say something about the treatment on the Continent.

Prof. O. Haab, Zurich, Switzerland—I can not say much about this treatment of Deutschmann's. I have tried it, but have had almost the same results as with the other methods. I visited him and saw some six or seven cases of his in very good condition, but my experience has not been so favorable. He says it is necessary to perform the incision sometimes ten, twelve or fifteen times, but it is very difficult to get a patient to come for fifteen operations in a clinic, and so I can not say exactly whether the method is a good one or not. It must be further studied.

THE EVOLUTION OF THE TREATMENT OF PELVIC INFLAMMATION.*

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Standing to-day as we do on the summit of perfected work in pelvic surgery, it is difficult for us to appreciate the helplessness of those who have preceded us in this field. Meiggs, the accomplished writer, the brilliant teacher and the leading practitioner of his day, describes in graphic terms the tubal tumor filled with water, pus or blood, and says, "the Fallopian tubes may be the seat of inflammation which will render fecundation impossible, but they are equally impossible of diagnosis during life." No one could present a more brilliant word picture of death from ectopic gestation than could he, but he was forced to end with the wail, "Alas, what can we do? Where is the surgeon who would be brave enough to open the abdomen on an uncertain diagnosis?" Much as he realized that surgery would afford the only hope of saving the life of the afflicted, he could not consistently urge its practice when he was calling on the attorney general to administer condign punishment on Atlee for his temerity in invading the peritoneal cavity for the removal of ovarian cysts.

The occurrence of pelvic inflammation in its various forms, involving tubes, ovaries, pelvic peritoneum and pelvic cellular tissue, could not escape the acute investigation of accurate observers; but its effects were most frequently observed after death. The course of invasion and its cause of development were not understood.

The influence and significance of micro-organisms had not yet encroached on the horizon of human intelligence. Failure to recognize their significance as a cause of disease kept them in terror from the invasion of the peritoneum for surgical purposes. The surgeon rash enough to enter found his reputation damaged by the frightful mortality which followed his action. The utilization of the principles enunciated by Pasteur in the investigations and practice of Lister, dispersed the thick cloud which had enveloped the progress of surgery and gave its advocates the ability and courage to investigate new and hitherto forbidden fields. The occurrence of pelvic suppuration had been recognized and its ravages appreciated, but in combating it, Thomas was an advanced leader, when in 1868 he advised that "operation should be deferred until all the efferent lymph has been softened, until all the abscesses have been coalesced and until the accumulated pus has broken down the tissue between itself and the channel of evacuation." The abscess may open through the vagina, the rectum or the abdominal wall.

Doubtless most of you know men who apparently have not passed 1868 in their methods of practice. Into this state of chaos broke Tait like a brilliant meteor in 1872, when he advocated and practiced the removal of the uterine appendages for inflammatory conditions. His axiom, "when in doubt make an exploratory incision," proved the searchlight in pelvic surgery. There was no longer excuse for want of knowledge of the course and results of pelvic inflammation, for his enthusiastic disciples were frequently in doubt and considered his teaching as the only true gospel.

As a consequence, no portion of the abdomen or pelvis was free from investigation, and every phase in the course of inflammatory conditions was subjected to accurate observation. The secretions and fluid collections were carefully studied and the association of internal conditions with external infections did not fail of discovery. The macroscopic study of the invasion of internal structures by micro-organisms promptly revealed the fact that these parasites generally reached the internal organ through the continuous mucous membrane and dispelled the previously held view that the cellular tissue was the structure most frequently involved. Tait was so profoundly impressed with the idea that the invasion was through the continuous mucous membrane that he was induced to advocate the removal of both ovaries and tubes when the appendages of one side were diseased, even though those of the other were as yet free, because he found that very frequently the remaining tube and ovary became affected when permitted to remain and necessitated resort to a second operation. This principle carried further led Pean, Baldy and others to advocate the removal of the fundus of the uterus, whenever conditions were such as to demand the extirpation of both ovaries. The doctrine that the uterus should accompany the appendages in their flight led to the division of the leaders into two schools, one of which would attack all cases through the vagina, while the other faction was equally vehement in the advocacy of the abdominal as the only true route for the removal of these structures. As is usually true, the happy medium lies between the two.

The application of the principles of Tait by his enthusiastic followers led to such a wholesale castration of women that there was aroused a wholesome fear that if permitted to increase in arithmetical progression there would be a marked reduction in the progress of the race. This reaction affected not only the profession, but the patients, who were deprived of the function of procreation, which possibly they had decried when they were its possessors, and now overvalued that which was lost.

Our study now became how to save rather than to sacrifice, and we retraced our lines of study and sought how to arrest the inflammatory process before it had involved the deeper structures. Such investigation deepened the impression that the changes were bactericidal in their origin, and could be divided into two great classes; the specific or gonorrheal, and the septic. That in both classes the infection was conveyed to the patient and did not originate within her organism. The application of surgical or aseptic principles to the practice of obstetrics has greatly lessened the frequency of septic processes. The recognition that gonorrhea in its influence on the female economy is more deleterious than is syphilis, has caused the profession to be anxious to arrest it in its early stages and thus prevent its more serious ravages. The acceptance of the bactericidal origin of pelvic inflammation makes us chary of intra-uterine routine treatment. The sound, tent and uterine dilator are infrequently employed, and then only with aseptic precautions. In uterine inflammation drainage is promoted and this by the use of the dilator and curette. Where the inflammation is of such a character as to threaten the deeper structures, we no longer sacrifice both appendages when those of one side only are severely involved, but precede the abdominal or vaginal incision, as may be chosen, with a dilatation and curettement of the uterus.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

While our investigations of the abdomen of the living woman teach us that the most frequent avenue for invasion is by the continuous mucous membrane of the uterus and tubes, it should not be overlooked that the blood vessels and lymphatics also afford ready entrance to the deeper structures. The recognition of this truth is of the greatest value from the standpoint of treatment. Inflammation involving the tubes, ovaries or peritoneum may be treated by either the vaginal or the abdominal route, according to the character of the involvement and the predilection of the operator, but in the majority of cases of cellular inflammation the election will be most frequently through the vagina. With the development of such inflammation we do not follow the already enunciated dictum of Thomas, but endeavor to afford free vent for the escape of exudation, and thus avoid cicatricial contraction. In involvement of the peritoneum we readily resort to the use of the curette, and at the same time break up pelvic adhesions and afford drainage. Each diseased patient is carefully investigated and where further invasion is threatened we endeavor to arrest its progress by the dual procedure of curetting and pelvic drainage, most frequently through the vagina.

The motto we now inscribe on our banners is, sacrifice nothing which we can save, keeping before us the purpose to restore our patient to health. Health in its true sense means not only freedom from discomfort, but also regained function.

DRAINAGE VERSUS RADICAL OPERATION FOR SUPPURATION IN THE FEMALE PELVIS.*

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It is my purpose in this communication to contrast the field of application of drainage with that of radical operation in the treatment of suppuration in the female pelvis. Recently I reported[1] my entire experience with the various operations which have been practiced for the treatment of suppuration in the female pelvis. This paper covered so wide a field that it was impossible to discuss in detail all the advantages and disadvantages of the drainage operation. In this communication I propose to discuss more fully not only the merits of the drainage operation, but also its limitations.

The chief field for the drainage operation is in cases of large pelvic abscesses in patients acutely ill and in those prostrated from long-continued suppuration. The drainage operation in this class of cases gives a mortality of 2 per cent. as contrasted with one of 25 per cent. or more by abdominal section. In this field there is no question concerning the positive merits of the drainage operation. It is done quickly, does not cause shock to the already weakened patient, and permits her to recover from the critical condition in which she is placed by the large abscess. In most cases of this kind it is best simply to evacuate the large abscess, wash it out and do nothing further. When the strength of the patient permits, in addition to this, it is best to palpate for additional abscess sacs in one or both tubes, and to evacuate these; but in many cases of large abscesses it is better to postpone the opening of small pockets to a subsequent date. Where the abscess is single, as in puerperal phlegmon, ovarian abscess and intraperitoneal abscess without pyosalpinx, the simple incision results in a perfect cure. Where several smaller pockets exist in addition to the large abscess, it is necessary to open these either at the initial operation or subsequently in order to effect a cure.

The next class of cases in which the drainage operation is of signal service is that in which suppuration occurs during an acute attack of peritonitis, and in which the peritonitis tends to become progressive, with the usual accompaniments of distension of the intestines, tendency to intestinal paresis and prostration of the patient from septic absorption. In these cases the pus may be in the tubes, or in the ovaries, or within the peritoneum. A radical abdominal operation under these conditions has a high mortality as contrasted with the scarcely appreciable mortality for a drainage operation. An analysis of my own cases shows a very large percentage of permanent cures in cases of puerperal origin. I have operated on only one case of recent suppuration from gonorrhea.

The small group of cases of suppurating hematocele from extrauterine pregnancy is also best treated by the drainage operation. I have operated on four such cases. All four recovered from the operation, but in two it was necessary subsequently to do a radical operation, in the one case because of the development of a hydrosalpinx, and in the other because of the continued annoyance of a tubal mole.

In the usual typical case of pyosalpinx or abscess of the ovary, uncomplicated by intraperitoneal abscess, and in which the amount of pelvic exudate is moderate and the size of the tubal or ovarian abscess small, I have never practiced the drainage operation, but have treated all such cases (which make up the great majority of cases of pelvic suppuration in women) by the radical abdominal operation. On theoretical grounds the drainage operation does not seem indicated in this group of cases. The pus pockets are apt to be multiple and small, the risk of opening the peritoneum is great because of the lack of extensive exudate walling off the peritoneal cavity, and therefore the results of the drainage operation would probably be unsatisfactory because of the incompleteness of the drainage and the risk of setting up a general peritonitis. Moreover, the results of the radical abdominal operation in this group of cases is so satisfactory that it will be difficult to improve on it by any other procedure.

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* [illegible] the Fifty-third Annual Meeting of the American [illegible] in the Section on Obstetrics and Diseases of [illegible]d for publication by the Executive Committee: [illegible] W. E. B. Davis and Henry P. Newman.

[1] [illegible]nt of Suppuration in the Uterine Appendages, [illegible] vol. III, No. 13, March 29, 1902.

Within the limitations laid down incision has proved to be a most conservative operation, not only in the saving of life, but in the conservation of the sexual organs. In only three cases out of fifty-two was it necessary subsequently to remove more than one uterine appendage. The operation has saved many young women from the annoyance of a premature menopause, and has enabled some of them to bear children. Six pregnancies are known to have occurred, resulting in five children—one pair of twins, one miscarriage and one pregnancy now developing.

With the operation of incision and drainage in cases of acute inflammation of the uterine appendages without pus, as practiced by Henrotin, Pryor, Polk and others, I have had no experience, with the exception of a few cases in which an extensive puerperal pelvic cellulitis was incised with the expectation of finding pus. In all of these cases the incision promoted the early resolution of the exudate. It is my intention to practice this operation in puerperal cases in the future, as I believe it will promote an early recovery in this group of cases and prevent the destruction of a certain precentage of the tubes and ovaries involved.

Having emphasized the advantages of incision and drainage, it is well to refer to some of the disadvantages inherent in this method of treatment. These disadvantages grow out of the imperfections in the diagnosis of morbid conditions in the pelvis. At times an ovarian cyst with peritonitis will be diagnosed as a pelvic abscess. Incision and drainage not only will not effect a cure, but may cause a disagreeable complication when the cyst is removed at a subsequent operation.

When incision is practiced in cases of small pus tubes it is quite easy to overlook one or more of the pus pockets, and quite easy to open the general peritoneal cavity. Therefore, in this class of cases also the operation is contraindicated.

In a certain percentage of cases, at times because of the condition of the patient, at times because of the inaccessibility of some of the pus pockets, collections of pus are overlooked in the primary operation of incision and drainage. In these cases it may be necessary to repeat the operation once or twice in order to effect a cure or to obtain healing of the sinus. This has been my experience in a small percentage of cases. It is in this class of cases that the skill and experience of the operator is of most importance. The surgeon of experience, who will restrict the operation to the classes of cases in which it is indicated, and whose trained touch can differentiate between pus sacs and adherent intestines, will not have a large percentage of failures to evacuate pus sacs, and will have only a small percentage of accidents, such as hemorrhage, perforation of the intestine, wounding the ureter, etc. On the other hand, the inexperienced surgeon, unless he restricts his application of the operation strictly to cases of large abscesses, is likely, through inexperience, to overlook the smaller pus sacs, or to wound adjacent viscera, in a considerable percentage of cases.

The technic of vaginal incision and drainage for pelvic suppuration is extremely simple in some cases and extremely difficult in others. In cases of single large abscesses and cases of puerperal phlegmon pointing toward the vagina, the operation is very simple. The patient is anesthetized, the vagina cleaned, the cervix exposed and an incision made with a knife across the vault of the vagina behind the cervix, the incision extending through the vaginal wall. This incision may be continued, the tissue being divided layer by layer until the abscess is reached; or, what is usually preferable, a pair of scissors, neither sharp nor blunt, is passed through the vaginal incision and pressed against the projecting abscess and pushed through into the abscess sac. The handles of the scissors are then opened, tearing the perivaginal tissues and the peritoneum, and giving vent to the pus. In the case of broad ligament phlegmon the incision is made over the most prominent portion of the abscess. In selecting the point for the incision the ureters and the uterine vessels must be avoided. In case the abscess is connected with one or the other uterine appendage and does not fill up and cause Douglass' pouch to bulge toward the vagina, the incision through the vaginal wall should be made to one or the other side of the median line, and then the scissors be pushed on into the abscess sac. When the abscess sac is distinctly lateral and relatively high, it may be necessary to separate the folds of the broad ligament from below with the fingers until the abscess is reached, and then puncture it with the scissors. This I have found necessary to do in numerous cases, especially in cases of ovarian abscess of puerperal origin.

So far the operation is simple and easy to perform. The cases in which the experience and skill of the surgeon come into play are those in which the abscess is not so large and those in which the main abscess within the peritoneum is complicated by pyosalpinx or ovarian abscess. In such cases the trained touch of the surgeon is necessary in order to distinguish the pus tube or abscess of the ovary from infiltrated or adherent bowel. In many cases this is difficult even for the expert to do, and at times discretion is the better part of valor, and the surgeon having evacuated one or more abscess sacs may well hestitate to puncture one in which the diagnosis is uncertain, lest by accident he open the bowel and cause a fecal fistula. Large experience in dealing with the results of pelvic inflammation by abdominal section will prove most helpful in the exact diagnosis and proper treatment of pus collections when treated by incision and drainage from below.

In a small percentage of cases, usually of puerperal origin, it will be necessary to supplement the vaginal incision by an incision through the groin, and in a few cases in which the abscess points in the groin the only incision required can be made above Poupart's ligament.

The points to be emphasized are that in large abscesses in patients who are extremely prostrated and ill the least done the better; the large abscesses should be freely opened and nothing more done. In many cases it is best to avoid even washing out the sac and to leave this for a subsequent occasion, as the strength of the patient will not admit of the prolongation of the operation. In all cases the main object to accomplish is to make the opening in the dependent portion of the abscess and to make the opening a free one. The opening should be made wide and free and not a mere puncture. If this is accomplished, most cases will undergo spontaneous cure without gauze packing and without subsequent irrigation. Packing and subsequent irrigation are only to be employed when this is necessary to effect the thorough evacuation of the abscess and the closure of the sinus.

DISCUSSION.

Dr. Seth C. Gordon, Portland, Maine—I am very glad that this subject has been presented. I brought up the same question two weeks ago, in my address before the American Gynecological Society. I have done this for more than twenty years.

It is the simple application of ordinary surgical principles. Operate and remove pus every time you can. There is nothing more settled than that. An abscess should always be opened and evacuated as soon as possible. I agree with Dr. Noble that ordinarily you had better let these cases alone, and not do too much at the time you open, unless it is an old abscess. It is not difficult ordinarily to make a diagnosis, because, first of all, you generally have a well-marked history of an inflammatory process, such as temperature, pulse, pain, etc. Second, if you are familiar with the touch you generally get a little indentation behind the uterus. and that is the point for making your incision. I use the knife only, and then dilate with a uterine dilator. Formerly I used an aspirator, and then dilated with a dilator or scissors. It seems to me that this has saved thousands of women, not only from long suffering but subsequent abdominal section.

Dr. W. H. Humiston, Cleveland, Ohio—Time and experience will bear out Dr. Noble's statements. I had a case a year ago of streptococcus infection following labor, in which the temperature ran up to 105 F., the woman had daily chills and a very weak pulse. With a few drams of chloroform and fifteen minutes' time, I had the abscess evacuated and she went on to complete recovery. She became pregnant again in another year. This shows the effects of an early trivial operation. If the woman had been allowed to become profoundly septic, an abdominal operation would have been required and possibly the result would have been fatal. In acute infectious conditions of the pelvic organs, radical abdominal operation is attended with a high mortality, and where we have the conditions as mentioned by Dr. Gordon, it is best to open at the most convenient place. The operation is so slight in its effect, and the results so extremely gratifying, that it should always be done. If the radical operation is necessary later on, the woman will be in condition to stand it.

Dr. E. W. Cushing, Boston—I agree with Dr. Noble and Dr. Gordon. That is the way I began to treat these cases, but under the progressive impulse of the Philadelphia school some of us were induced to do everything through the abdomen. I know I have lost cases by trying to do such an operation when it could have been done with safety through the vagina and just as easily. It is not unusual for these collections to be very large, and be mistaken by the attendant and even the surgeon for an ovarian tumor. The acute symptoms may have subsided; the mass is as large as an infant's head, fixed so that operation by abdomen for ovarian tumor is sometimes done. In other cases which are acute, the pus is liable to be septic. It is safe to open the abdomen and let out the pus from an old pyosalpinx, but it is a different thing to let virulent streptococcus pus soil the abdominal cavity where there is every probability of acute infection, but no one can tell beforehand the nature of the pus. It is my general rule to let the pus out from below, if I can possibly get at it. It is easy, simple and harmless, and it can be done with a little cocain in very bad cases where an abdominal operation would be fatal.

Dr. T. J. Watkins, Chicago—The difficulty usually lies in determining what class of cases are adapted to this method of treatment. Gonorrheal cases are bad ones for vaginal section and drainage, because of the large amount of exudate that occurs and because the germs are liable to remain latent and cause trouble after an indefinite length of time. Tubercular abscesses are also bad cases for this treatment. Puerperal cases are probably the most satisfactory, as the exudate tends to entirely disappear by absorption after the pus has been removed. It is seldom indicated in gonorrheal cases, except in the presence of large abscesses. I recently looked up my statistics of drainage cases for five years, and found that about 10 per cent. required subsequent operation.

I am glad Dr. Noble brought out the point that many of these cases are completely cured by this operation; 90 per cent. of mine were cured. I pack with gauze and remove it gradually, so that it is all removed by the end of the fifth or seventh day. With this method, convalescence is more rapid, less painful, and the amount of suppuration is less than with tube drainage. Exploratory vaginal section is of great value in selected cases of puerperal cases, and in my experience it has occasionally been a life-saving procedure.

Dr. G. B. Massey, Philadelphia—I come from Philadelphia, but do not feel guilty of the Philadelphia error mentioned by Dr. Cushing. I remember protesting in the Philadelphia Obstetrical Society against flooding the abdomen with pus as long as ten years ago, claiming that mere lancing of the abscess at its lowest point was sufficient. In treating these acute abscesses, the vaginal puncture ought to be made early, to avoid perforation of the bowel.

Dr. Hugo Ehrenfest, St. Louis, Mo.—The effect of vaginal drainage is dependent on the location of the pus. We must differentiate between an abscess in a tube, in the peritoneal cavity, or one in the parametrium. The results are undoubtedly excellent when pus is in the parametrium, but not so good in pyosalpinx, where the abscess cavity is lined by mucous membrane, which offers a good shelter to the germs. I am fully in accord with the statement made by Dr. Watkins that gonorrheal cases do not give as good results as puerperal cases, and we find the explanation in the fact that in gonorrheal cases the suppuration occurs in the tubes, while in puerperal cases the abscess usually is in the parametrium or pelvic cavity.

Dr. Thomas G. Cullen, Baltimore—In those cases where the inflammatory exudate lies between the folds of the broad ligament instead of in the tubes or pelvic cavity we invariably drain extraperitoneally as advocated by Dr. Noble. We make an incision similar to the one employed in the appendix operation and on arriving at the peritoneum gradually by blunt dissection reach the connective tissue of the broad ligament without injuring the peritoneum. In one case the peritoneum was peeled back so readily that I thought we had perforated it, thereby entering the pelvic cavity. Fearing that some pus might have entered the pelvis, I made a median incision and found the peritoneum everywhere intact, but it was so thin that the dividing wall was thinner than parchment. Great care must be exercised in the evacuation of these extraperitoneal broad ligament accumulations.

Dr. Gordon's point is a good one. After making a transverse incision one inch in length through the vaginal mucosa just posterior to the cervix, I gradually peel upward, following close to the posterior surface of the uterus. As soon as the peritoneum is felt this is punctured with a uterine dilator which can not injure any pelvic structures. If the opening in the vault be too small two uterine dilators introduced simultaneously and at right angles to one another will easily afford the necessary space. Where there are purulent accumulations in the pelvis careful scrutiny should be made to determine if secondary pockets exist. Both tubes should also be examined and they can be split and drained if necessary. The mere opening of Douglas' sac with no further search is often of little value on this very account. In acute cases the walls of the abscess sac rapidly collapse, but in chronic cases the resultant scar tissue prevents obliteration of the abscess sac for some time, and great care must be taken to maintain free drainage.

Dr. Noble, in closing—I am pleased at the unanimity of opinion on this subject. Dr. Humiston spoke of puerperal cases, to which I have alluded. The operation does the most good in puerperal cases. It not only cures the immediate trouble, but saves the woman's tubes. You will seldom have to take them out when you drain, provided the puerperal case is not one of gonorrheal infection. Ninety per cent. of cases, when properly incised, do best when drained with nothing at all. Leave them alone, provided you do not made a "puncture." Dr. Kelly's work has done us much good, and also some harm, because the term puncture indicates a little hole, and usually too small an opening is made. I oftentimes make an opening from one bone to the other, opening up the pelvis widely. If you make it that way, big abscess cavities will collapse and cure themselves without any trouble. If we have a small abscess, and that is the class of cases in which the operation is least applicable, we may have to pack to get it to close up. I almost never drain with gauze or tubes. It often lessens the value of the work.

I, too, have suffered from the teaching of the Philadelphia school, and the best result I have been able to get with the radical operation is 27 per cent. mortality in the complicated cases. This is shocking when you can get a 2 per cent. mortality with the drainage operation.

As to the comparatively bad results in gonorrhea, this agrees with my own opinion, and is indicated by the fact that I state in my paper that I have operated on but a single recent case of gonorrheal abscess. In old gonorrheal cases, however, where the woman has had pus tubes for years, incision and drainage have given good results. I am fully in accord with the view that the gonorrheal cases are least adapted for the drainage operation.

In one point I can not agree with Dr. Cullen. Instead of going in from above, I think it far better to work from below. I never make an incision above Poupart's ligament, unless the abscess distinctly points in the groin. If the subcutaneous tissues are infiltrated, so that you know the abscess is coming out along the round ligament, or just under the skin, then make an incision there, but where the exudate is deep in the broad ligament, it is much more easily and better reached through the vagina. Neither need you fear a hernia afterwards. In almost every case drained above Poupart's ligament a hernia results. So far as I know, I have operated on about sixty of these cases, and I have never injured the ureter, have never had any hemorrhage, nor injured the bowel.

Clinical Report.

SUPPRESSION OF THE SECRETION OF URINE FOR SEVEN AND ONE-HALF DAYS

WITHOUT SEVERE SYMPTOMS OF UREMIC POISONING, THE PATIENT RECOVERING.

GEORGE SEILER, M.D.
ALMA, WIS.

I. B., a saloon- and store-keeper in the country, aged 48, was taken sick with "lumbago" June 6, 1902. This lasted about three days. On June 9, the patient had an attack of renal colic and passed about 75 to 100 renal calculi the size of a millet seed and some as large as small peas. The urine passed contained a little blood. June 14 he had another attack of renal colic and from this day on the excreting faculty of the kidneys was entirely suppressed for seven and one-half days.

The patient is a very heavy-set man, weighing 250 pounds. His abdominal walls are so thick from fat that palpation of the abdominal organs is very difficult. He was never seriously sick up to last September, when he had his first attack of renal colic after and during which he passed a number of renal calculi of the size of small peas. He was then free from an attack up to the present time.

Previous to the suppression of urine, which occurred June 14, he passed a little less than the daily usual amount of urine and complained of some pain, especially in the right lumbar region on deep pressure and without it. In the afternoon of June 14, he had an attack of colic again for which I gave a hypodermatic injection of morphin, which relieved the pain. I then gave him nitrate of potassium with extract of henbane, ½-grain doses of calomel and bicarbonate of soda every fifteen minutes followed by sulphate of magnesia. The next morning, as he had not passed a drop of urine, I introduced a soft catheter, but did not get any urine. The same was the case June 16.

Treatment was continued, with the addition of warm wet applications to the lumbar region and later wet packs twice a day. In the evening Dr. Tenney of Alma saw the case with me and suggested tincture of digitalis in 10-drop doses every three hours and Rochelle salts repeated oftener. I had also given a hypodermatic injection of pilocarpin, one-third grain at 6 p. m., which produced a copious sweat lasting fifteen or twenty minutes. June 17 the patient became drowsy and vomited often greenish slimy water with great force; no urine by catheter; bowels moved often.

June 18 and 19 the patient was in almost the same condition but more drowsy and vomiting oftener, no urine secreted, pulse and temperature normal. I kept up the wet pack and pilocarpin injections twice a day and also gave two drops of croton oil in glycerin. June 20: condition the same, treatment continued. Towards evening patient had a severe spell of pain in the right lumbar region with pains lancinating toward the right testicle and glans penis, probably caused by the stone, which was suspected to blockade one ureter, moving towards the bladder. A hypodermatic injection of morphin and atropin relieved the pain.

On the morning of June 21 his condition was unchanged, save that he was not so drowsy and did not vomit so often; no urine by catheter. Dr. John Lyman of Eau Claire, Wis., who was called in consultation, advised continuation of treatment and ½-grain doses of calomel every one-half hour continued for forty-eight hours as advised by Senn. As there was some dulness over the region of the right kidney he introduced a trocar at three different places, but only withdrew some blood, no urine. This excluded a hydronephrosis. Any other operation was, of course, out of the question. That evening the patient passed about one-half pint of almost clear straw-colored urine, which showed slight traces of blood under the microscope. The same treatment was continued and the patient passed almost a gallon of urine in the next twenty-four hours, vomited from one to four times a day, his drowsiness disappeared and urine was passed without pain, but the patient suffered a great deal of pain at the point where the trocar was inserted and temperature went up to 100 or 101. The pain diminished in the course of four days.

June 23: patient was very much improved and urinated freely more than a gallon of clear urine without a trace of blood. His bowels were kept open by Rochelle salts; the hypodermatic injections of pilocarpin were discontinued, as was also the calomel, as traces of ptyalism appeared. June 26 the patient was able to sit up and improved steadily. July 17: patient passed some gravel about the size of small peas and of irregular form; he has continually a sensation as if needing to pass water and a drawing feeling in his penis and still some deep-seated pain over the right kidney; otherwise he improved steadily and attended to his business.

The principal questions in this remarkable case are: First, what was the cause of the suppression of the secretion of the urine? 2. If there was an obstruction of one ureter—probably the right one where patient complained of the most pain—why did not the other kidney secrete urine? 3. Is it, as some authorities say, possible that if one kidney does not work the other one will in a sympathetic way refuse to work? The greatest wonder is that the patient did not show more profound symptoms of uremic poisoning and that he did not die in coma.

Is there such a case on record? I have heard there is nothing new under the sun, but I thought the case remarkable enough for publication.

Organization of the Medical Profession.—The medical profession has a power for good in the community which is not equaled by that of the clergy or the legal fraternity. Its power is, however, not exerted. It is dissipated by lack of concerted effort, and wasted by internal difference of opinion. . . . Why is it that after a hundred years of practice among the people, the educated and the ignorant alike, our influence is so transient, so feeble, that the most absurd fad, the most hare-brained delusion, the most fantastic fraud that comes along spreads its pernicious poison as rapidly among the people as fire in tow? Where is the educational power over the people of which we boast in our addresses and applaud in our after-dinner speeches? How loyal are the people to us, because of our single-mindedness and devotion to them in their sickness and affliction? How much weight has the opinion of the medical man in a public matter, and with what smiling indifference do not those who make the laws listen to his protests? There is something wrong here. There is manifestly some foolish want of thought in this ridiculous situation. . . . There are doubtless many things to which this state of affairs can be ascribed. One cause, however, stands out as first in importance. It is lack of organization.—Sweeney, in *St. Paul Med. Jour.*

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CHAUVINISM, ETC., IN MEDICINE.

Dr. Osler's address[1] on "Chauvinism in Medicine" before the Canadian Medical Association is an excellent one and is worthy of attention. Chauvinism in medicine is a reality, and it is not limited by national boundaries alone; it may exist in limited sections of the same country—though perhaps its most striking manifestations are seen existing together with other national prejudices. The subvariety of provincialism which Osler makes is strongly in evidence, and there was a certain appropriateness in that his address was delivered in a province where any outsider, however eminent he may be, unless with British or colonial qualifications, must take a course in a local institution before receiving license to practice medicine. We have troubles of our own; sectionalism is not unknown in the United States, as is innocently shown in many unconscious ways by most of us. We are all fallible and none of us live quite up to our ideals. The main thing is to have our ideals and try to live up to them. There is, however, more of it shown in the medical laws of Canada than in those of any commonwealth on this side of the border. Whether Dr. Osler's hearers made any personal application of his remarks to themselves we do not know, but they might have done so with profit. We all have our weaknesses and faults, and it is good discipline to be kindly reminded of them, a service we trust we are always willing to receive and reciprocate. At any rate we should be.

American physicians, and in this we here include Canadians, have one advantage over foreigners in this respect. It is a sort of fashion with us to go to Europe and broaden our minds and culture by imbibing from the time-honored founts of knowledge and thus free ourselves from a narrow Americanism that might grow too rank on our own soil. It is true that sometimes the tourist returns with an exaggerated notion of his acquisitions, but even that helps to check a too prominent nativistic Chauvinistic tendency, although it may be at the expense of occasionally substituting for it an even more objectionable one. It is the misfortune of our European confrères that they do not more often reciprocate; they might even find something to profit them here and enlarge their "Weltcultur" and ideals. We have here two tendencies to combat, only one of which is mentioned by Dr. Osler; the other is a lack of appreciation of our own professional work and standing, which is as bad in its way as Chauvinism. This, however, as Mr. Kipling says, is another story.

It would be interesting to know how Dr. Osler's remarks were taken by his hearers where he spoke of the value of a knowledge of the literature of the profession of different countries. How much does the average Canadian practitioner know of American current medical literature? Probably not much, and the American still less of what is being done in Canada. Of course, the greater loss is to the one who has the largest range of literature to miss, but the matter is not one for congratulation on either side. There is at the present time altogether too much nationalism, provincialism or Chauvinism, whatever one may choose to call it, in a profession that ought to be free from it, on both sides of the line. At present we fear (and this is suggested to us by a passage in one of the other addresses delivered at the meeting) that American medical literature is more familiar over there in the form of the "Medical Short Cuts" and allied publications than by those that are really creditable and representative. This is not what it should be.

What Dr. Osler says about the multiplicity of medical examining boards is true, but we think he hardly recognizes sufficiently the conditions in this country that have made the evils he mentions unavoidable. It will take time for matters to so arrange themselves here that any uniformity or reciprocity can be general between the states in the matter of medical registration. The reasons for this seem too obvious to require statement to our readers, and the present state of affairs, bad as it is in some respects, is infinitely better than the old one of absolutely no restriction—or the unquestioning acceptance of diplomas from every source. As he intimates, the condition is less excusable in Canada than in the United States, as there has there been a greater uniformity in medical education and the boards have had a longer existence, and all he says may be accepted without qualification for the Dominion. In our own country we will probably gradually relieve the greater hardships in many ways; for example, by providing for special examinations, as in Maryland, and by giving a larger discretionary power to examining boards. There will, in our opinion, however, be no uniformity until the general government makes a qualification of its own, which must be obtained by all who enter its service and which the states would in time be compelled to recognize of their own accord. Whether he is right in his view that examination for license should exclude the more theoretical and scientific subjects absolutely is an opinion open to question, but there is little doubt but that injustice may be done by giving too much importance to them, especially in the examinations of other than recent graduates. The machinery of our registration boards is new and has not yet worked itself into perfectly smooth action; in time we can expect better things and all criticisms like those of Dr. Osler have their utility.

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[1] The Journal A. M. A., Oct. 4, p. 855; and Phila. Med. Journal, Sept. 27, and Canada Lancet, October.

There are many other things in the address that deserve comment, but space is wanting. It is one that makes for professional righteousness, and we therefore the more willingly call the attention of our readers and the profession generally to its admirable exposition of matters that we can not take too much to heart. Its main contention for a broader liberialism in our ideas and practice, free from all local provincial and parochial littleness of feeling and speech, has seldom if ever been so well stated to our profession.

THE HEMOLYMPH GLANDS IN PERNICIOUS ANEMIA.

Until recently the pathogenesis of pernicious anemia belonged to the most obscure of medical problems. While far from elucidated as yet, the newer observations in regard to cellular toxins, especially the lysins, and still more particularly the hemolysins, seem to afford a new and secure basis from which to attack anew the problems of the evident excessive destruction of red corpuscles in this disease.

The simplest and most direct explanation of the excessive destruction of red corpuscles would be that it is due to the presence in the plasma of the blood of a hemolysin, whatever the origin of that substance might be. No one has demonstrated the appearance of any special autohemolysin in the blood of patients with the disease, however, and the conditions are probably not so simple as suggested. Continuing for a moment this thought of a special hemolysin, the next step would be to produce an antihemolysin, just as can be done in the case of so many of the other lysins and similar substances.

This pleasant dream must give way for the present to a consideration of the facts as they stand from the results of recent studies, especially by the application of careful microscopic methods. We refer to the investigation by Warthin[1] of the changes in the hemolymph glands in pernicious anemia. In eight cases thoroughly studied he finds that there is excessive phagocytosis of red cells in the spleen, the bone marrow, the lymph and also the hemolymph glands. Hunter claimed that the destruction of the red cells occurs within the portal area, but Warthin finds the bone marrow and prevertebral lymph and hemolymph glands contain abundant evidences of blood destruction in the form of phagocytes, in the interior of which red cells are undergoing disintegration. In the hemolymph glands are found varying degrees of dilatation of the blood sinuses, phagocytosis of red cells, often associated with increase in size and apparent increase in the number of the glands. Corresponding well to the intermittent clinical course of the anemia these changes are found in varying degrees in different cases. The changes described are not regarded as absolutely specific of pernicious anemia, because they are found also in sepsis and other similar processes, and in less degree even normally. It is the extent they reach that is significant. The pigmentation of the liver and kidney in this disease is a secondary one, due to the deposition of hemosiderin in granular form in the endothelial cells of these organs.

Viewed in this light the fundamental question in the etiology and genesis of pernicious anemia is: What is the cause of the increased phagocytosis of red cells? This question can not be answered now. Two possibilities are considered. There may be at work unknown substances that act primarily on the phagocytes, stimulating them to increased consumption of red cells. Or there may be unknown substances that so alter the red cells that they become fit prey for the phagocytic activities of the cells in the spleen, the marrow, the lymph glands and the hemolymph glands that normally dispose of useless red cells. There is warrant for assumptions like these in the action of toluylenediamin, which experiments show causes increased destruction of red cells by phagocytosis in the organs just named. This destruction of red cells by phagocytes is called hemolysis also, but it is an intracellular hemolysis, or erythrocytolysis, as distinguished from the hemolysis that may occur in the circulating blood in the presence of certain substances that cause diffusion of the hemoglobin.

THE UNCERTAINTY OF LIFE.

One of the largest life insurance companies of this country recently published a pamphlet containing a list of 435 persons at whose deaths policies were paid by the company during the year 1901, though the insurance on their lives had been in force less than a year. Considering how carefully medical examiners are selected as a rule and how thoroughly medical examinations are made, for the so-called big companies at least, this would seem a surprisingly large number of deaths early in the insured term. It represents actually about five out of every thousand policy-holders for whom risks were assumed by the company during the year. The risks were at least of average amount, so that nearly one million of dollars was paid out. As it is well known that first-year premiums on life policies are practically entirely eaten up by the expenses incurred in securing the risk, these precociously matured policies represent, we may say, a total loss to the company. Far from considering this item of loss as due to any defect of the insurance system or any failure of their medical examiners to detect pathologic conditions that were manifestly present and should not have been missed, the company in question sets it down to the inevitable uncertainty of human life, and uses the startling story of this costly bit of life insurance experience as a precious idea for their advertising department.

The company's officials are justified in assuming this very sensible position by data that may be obtained from an analysis of the death list. Unfortunately, the cause of death is not given, and the omission mars the value of the document considerably for physicians. The deaths are distributed throughout the year as follows:

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[1] American Journal of Medical Sciences, 1902, cxxiv, 674-718.

85 in the first quarter, 118 in the second quarter, 109 in the third quarter and 123 in the fourth quarter. The lowest number of deaths in any one month was 16, in the first month. The highest number was 51, in the seventh month. The fact that the deaths were more frequent toward the end of the year would seem to absolve the medical department of the company for much of the apparent blame that attaches to it. An interesting item of comparison in this matter is the alleged fact that nearly ten thousand applications for life insurance of nearly $30,000,000 in amount were refused by the same company during the same year.

The deaths occurred among persons of all classes and ages. There were students as well as professors and almost every possible occupation has its representative in the death list from that of the proverbially healthy farmer to the dangerous life of the train hand and locomotive engineer. There are a full dozen physicians in the list, three of whom died during the first three months of their insurance. None of these had policies for more than a thousand dollars except one, and he had but two thousand on his life, so that it seems improbable that any inkling of impending fate had come to them or they would surely have applied for larger amounts, the medical examination being the same for applications up to $25,000.

INTERNATIONAL RECIPROCITY IN MEDICINE.

A Vienna surgeon[1] is coming to Chicago to treat the daughter of a millionaire. A Chicago doctor has been asked to go to England to treat the daughter of one of the nobility. If some English physician is now summoned to Austria the circle will be complete and we may expect the capitalization of a syndicate to exchange physicians between countries. Our only authority, however, for the invitation from a British peer to the Chicago doctor of great self-repute and advertising ability is his statement in the advertisements in the Chicago newspapers. These say that he has refused the tempting offer, with its munificent remuneration, and will heroically devote himself to the patients dependent on him here. This decision is wise. In view of the thorny path in Germany for our export meat because of inferior pork, the nation should see to it that all products sent to foreign countries are of first quality. With this condition assured, we shall not object to the American physician taking his place in "the American invasion."

ONE ADVANTAGE OF TEA DRINKING.

The fact recently noted in our news columns (October 4, p. 848) of the lesser cholera mortality among the Chinese in the Philippines than among the natives and even less than among Americans in proportion to cases is possibly explainable. It is well known that the Chinese, or at least a large proportion of them, are much less addicted to raw water drinking than are other races. Their common drink is tea, of course in infusion, and in the boiling of the water they unconsciously protect themselves. That they do not escape entirely is easily accounted for, the cholera germ reaches their intestinal tract in articles of food which are not only not disinfected, but probably often directly infected with the germs. It is said, indeed, that the introduction of cholera into Manila was through the importation of Chinese vegetables. Cholera rages in China among the Chinese, but we can readily imagine it might be much worse were their habits as favorable for imbibing the germ as is the case among other races. It is not a racial but a dietetic peculiarity that protects them, and the lone redeeming feature in their hygienically sinful lives.

INCOMPETENT HOSPITAL MANAGEMENT.

A recent unfortunate occurrence of the death of a patient in a well-known hospital from an overdose of strychnin calls for some comment. It reveals a very bad practice—which we trust is unique—of leaving the making up of solutions of powerful drugs in the hands of undergraduate nurses, and the presumption, to call it no worse, of a superior nurse who, with or without the connivance of the pharmacist, introduced the use of one-grain tablets for the purpose of making up such solutions. Another very bad feature of the case is the attempt to lay all the blame on the undergraduate nurse who administered the fatal dose, under the not unnatural supposition, under the circumstances, that she was giving the ordinary tablet dose. What business a hospital could have with one-grain tablets of strychnin is hard to appreciate, and the practice followed by the responsible parties is as reprehensible as their conduct in regard to the young woman was objectionable. The blighting of her career for an error, serious as it was in its results, for which others who go uncensured were primarily responsible, is inexcusable. The case illustrates the lack of proper appreciation of their functions on the part of some who are too ready to take on responsibilities that in no wise belong to them, as in thus ordering the one-grain strychnin tablets, and then to put off the consequences of their misdoings on comparatively untrained and irresponsible subordinates. The censure of the administration of the hospital by the coroner's jury seems well deserved, and we trust its medical staff will succeed in promptly securing the reforms they are demanding.

THE NEW GOSPEL OF DIRT.

A writer announcing himself as a surgeon in one of the great hospitals and professor in a physiomedical college of one of our leading cities and medical centers, has recently given to a metropolitan journal an article nearly two columns long in condemnation of bathing, especially in the winter time. According to him a bath is a perilous thing. It is a custom of an innervating civilization, the natural man gets along without it—the more bath tubs and hot water the weaker the race. We can admit that the habitually unbathed individual is stronger in a sense and to some senses, but our author goes farther and claims that with every hot or cold bath in cold weather we invite pneumonia; that only the excretion loaded cuticle can give the proper protection. He has learned, he says, from actual experiment, on himself and others, that the skin does not need bathing to be clean. Dressing to suit the weather and changing underclothing sufficiently often is all that is needed. Perspiration is also apparently considered as an abnormal symptom, or rather as a bad habit that we must learn how to prevent. To refrain from baths and avoid perspiration are the important rules of hygiene inculcated by the reformer. The conventional hobo best fills the bill, and is therefore, as we may reasonably assume, to be taken as the nearest to the ideal of personal hygiene in actual practice. It would be pleasing to learn how this surgeon manages in his surgical work, or does he find in the abnormal conditions there occurring reason for temporarily abandoning his principles? It is to be hoped he does.

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[1] See General News column, p. 922.

EDUCATION AND INSANITY.

Some of the newspapers in this country have picked up a press report of the recent utterances of a French physician that seek to establish a correlation between the increase of insanity and the spread of popular education. This is not a new idea; it has long been held that much of the increase of insanity is due to the increasing complexity in modern life and the educational demands are only the attempt to meet the changed conditions. It is not education that increases insanity; it is the condition that needs education as its antidote. The old saying that a little knowledge is a dangerous thing is true enough, and a misused knowledge of reading devoted only to ephemeral and morbid publications, the dime novel and the yellow press does not conduce to the best mental health. This, however, hardly comes under the head of education, and it is a question whether the environments of modern civilization bear harder on the absolutely uneducated or the partially or imperfectly educated. There are a good many elements in the question to be considered, and judging from the effects of contact with civilization on savage or inferior races it would seem possible that even a very little tincture of modern culture would be, in its way, a safeguard. There is much truly said of the evil effects of overstrain in mental training, but that is an avoidable error and its results are not probably chargeable against education in general. There is little doubt that our modern civilization is hard on certain weaklings who would have been better off in some respects as regards their mental health if they had lived a hundred years ago, and to this fact is perhaps to be attributed considerable of the increase of insanity of the present day. It is a mistake, however, to credit any considerable part of this to education; it is an example of the fallacy of confounding the cure with the cause, which in one way or another we, as physicians, not infrequently meet. Education does not necessarily lead to happiness—it adds to our responsibilities and anxieties—and, as the preacher says, "with much wisdom there is much grief, and he that increaseth knowledge increaseth sorrow"; but, after all, wisdom is the principal thing and the complete bliss of ignorance, were it desirable, is at the present time beyond the reach of even the poorest.

Anesthesia and Alcoholics.—In operations on alcoholic subjects it is often wise to give them a drink of spirits an hour or less before its performance. These people are more restless than others and often require a greater quantity of the anesthetic to abolish sensibility, but long deprivation of drink only tends to intensify those unfavorable tendencies.—*Inter. Jour. of Surg.*

Medical News.

CONNECTICUT.

Personal.—Dr. Joseph A. Cooke, Meriden, is completing his European trip by journeying through England and Ireland.

Physician Forfeits Bond.—Dr. Patrick J. Callaghan, Waterbury, charged with illegal practice of medicine, failed to appear when his case was called, September 23, and his bond of $300 was forfeited.

Cancer Doctor Acquitted.—In the case of A. Stanley Maine, a cancer doctor of Hampton, charged with violation of the medical practice act of 1893, the jury, after an hour's deliberation, returned a verdict of "Not guilty."

Yale Clinical Building Opened.—The new clinical building for Yale Medical School, given by Mrs. Thomas G. Bennett of New Haven as a memorial to her mother, the late Mrs. Jane Winchester of Prospect Hill, was opened at the opening of the college year. It represents an outlay of $110,000.

August Mortality.—During August 1348 deaths were reported, 46 less than the previous month, 38 more than in August, 1901, and 46 less than the August average for five years. The death-rate was 17.8 per 1000 per annum. The deaths from infectious diseases were 503, or 37.3 per cent. of the total mortality.

DISTRICT OF COLUMBIA.

Personal.—Dr. George N. Kober, Washington, has accepted the appointment as a member of the consulting board of the Washington Asylum Hospital.

College Opens.—The session of the medical department of the National University, Washington, was opened, October 6, with a lecture by Dr. D. Olin Leech.

Blacklist Redivivus.—Washington physicians have inaugurated another effort to protect themselves against non-paying patients. Ten years ago a similar organization was started but was short-lived. The new association known as the "Doctor's Protective League" proposes to provide each member with a list of unwilling payers, and also to formulate a fee-bill.

Interne Dismissed for Striking Patient.—Dr. D. T. Stuart, resident physician at the Emergency Hospital, Washington, was dismissed, September 24, by Dr. H. L. E. Johnson, executive officer of the institution. The reason for this action was that Dr. Stuart had struck a patient attempting suicide, who had caught the physician's finger between his teeth and was biting it. Dr. Stuart admitted the charge, but said he considered that the circumstances justified his act.

ILLINOIS.

Smallpox has been reported to the Illinois State Board of Health during the past week from seven places in six counties.

Personal.—Dr. Samuel M. Wylie, Paxton, has returned from his trip to Russia, Egypt and the Holy Land.——Dr. James H. Finch has returned to Champaign after a summer abroad.——Dr. Charles B. Taylor has entered on his duties as assistant superintendent of the Illinois Asylum for Feeble-Minded Children, Lincoln.

Chicago.

Twenty Students Graduated.—At the convocation of the summer class of the medical department of the University of Chicago, October 2, twenty students were graduated. Dr. Norman Bridge delivered the doctorate address.

Physician Exonerated.—Dr. Mark T. Goldstine, who was held pending the investigation by the coroner's jury of the death of a patient in the office of the physician, was exonerated of all blame in connection with the man's death.

Typhoid Deaths.—Only twenty-two typhoid fever deaths were reported during the week—the fewest in any week since that ended August 2. In that week 16 such deaths were reported—a sudden increase from a weekly average of 8 during the month of July. For the successive weeks following that of August 2 the reported deaths were 28, 45, 53, 51, 55, 43, 38, 28 and 22 respectively.

Diphtheria on the Increase.—During the week the Health Department laboratory received an increase of requests for cultures, of which a majority have been diphtheria. Physicians report that the diphtheria is of the malignant, lymphatic type, the child often not complaining at all of a sore throat, and the first cultures frequently fail to reveal the typical diphtheria bacillus. Physicians should be on their guard against this form of the disease.

To Vote on Additions to County Institutions.—The county board has decided to submit to the voters at the election next month, a proposition to issue $500,000 in bonds, of which $350,000 is to be devoted to the remodeling of the insane asylum and hospital at Dunning, erecting additions thereto and also constructing a group of cottages for consumptives, and $125,000 for the erection of a ward for epileptics, a ward for contagious diseases and a ward for alcoholic cases at the County Hospital.

Personal.—Dr. Clara Ferguson, formerly of the staff of the county institutions, Dunning, has returned from a year of study in Vienna, and is now at her home in Tipton, Iowa.——Dr. Jacob Frank has been elected president and Drs. Berthold Pirosh, and Theodore B. Sachs, vice-presidents of the medical staff of the Orthodox Jewish Home for the Aged.——Dr. Harry E. Clyde has been appointed junior professor of surgery in the Illinois Medical College.——Drs. Franklin H. Martin and Thomas E. Roberts have been elected medical directors of the Mutual Life Insurance Company of Illinois.

The Week's Mortality.—The total deaths reported for the week ended October 4, 471, are 25 more than for the previous week and 52 more than for the corresponding week last year. This is equivalent to an annual death-rate of 13.48 per 1000. The increase is due chiefly to the effects of the unfavorable weather on chronic invalids; the deaths of those over 60 years of age are nearly 10 per cent. greater than the week before and one-third greater than a year ago. Deaths from violence also account, in part, for the increase—44 during the week, 29 the week before and 32 in the first week of last October.

Medical Colleges Open.—The opening of Northwestern University Medical School began with a reception to the older medical teachers, October 7, followed by an address by Dr. Henry Gradle on "A Glimpse into the Future of Medicine." The registration thus far is larger than in any previous year. Dr. F. Robert Zeit takes the chair of pathology for the year, vice Dr. A. P. Ohlmacher, resigned. The medical department of Rush Medical College, affiliated with the University of Chicago, opened October 1. The number of new students was cut down materially because of a new rule requiring one year's credit in college work for admission.

Presbyterian Hospital Affairs.—A few weeks ago a death by misadventure occurred at the hospital, from an overdose of strychnin, the blame for which was placed on an undergraduate nurse, who was forthwith discharged, with her professional career blighted. The evidence given at the inquest was so unsatisfactory and the attitude of the superintendent to the coroner's physician so inimical that the jury censured the management for not reporting the death to the coroner's office, for leaving poisonous medicines where untrained nurses had free access to them, and for employing as pharmacist a nonregistered pharmacist. The attention of the State Board of Health having been called to this matter, an investigation was made, as a result of which the superintendent promised that in future medicines should be given out only on prescriptions of regularly practicing physicians, individual prescriptions being made for each patient; that nurses are to mix no medicines, which are to be furnished them in the form of separate doses and that drugs are to be kept and dispensed by a licensed pharmacist. Various changes have been suggested, among them the establishment of a separate training school for nurses, but thus far no definite information is at hand. It has also been rumored that the medical superintendent might be replaced.

INDIANA.

Personal.—Dr. William Stemen, Fort Wayne, who returned from the Philippine Islands two years ago, will locate in Colorado Springs.

The Physicians' Defense Company of Fort Wayne has been licensed to transact business in Missouri. The company guarantees to protect its members from all prosecutions for malpractice.

Grave-Robbing Scandal.—The daily press of Indianapolis has been filled with harrowing stories about the wholesale robbery of graves in the cemeteries around Indianapolis, to furnish anatomic material for the medical colleges of the city. Six demonstrators of anatomy are at present under bonds and seven colored men who are said to have been the actual grave robbers are under arrest. We have as yet received no authoritative information regarding the matter.

Central College Opens.—The Central College of Physicians, Indianapolis, opened for the year October 2. In a week the new college building on Senate Street will be ready for occupancy. The chair formerly held by the late Dr. Joseph Eastman will be filled by Drs. Thomas B. Eastman and Thomas B. Noble. Prof. Lotz of Shortridge high school will take the place of Prof. G. Benton as professor of chemistry. Dr. Louis Burckhardt, professor of physiology, will succeed Dr. John T. Scott as professor of obstetrics.

Medical Practice Act Upheld.—By unanimous decision of the Indiana Supreme Court, October 7, the law of 1901 defining the practice of medicine was declared constitutional, and the powers of the courts to enforce it against all persons who attempt to practice without a license was fully sustained. The case came up from Lawrence County, where Prof. George Parks was arrested for practicing without a license, having treated a boy, who is a cripple by what is known as "magnetic healing." The court upholds only reputable schools of medicine, and decides against the practice of "christian science" or healing by faith. The State Board of Examination and Registration will proceed at once against that class under the decision. A full report of the decision will appear in our medicolegal department.

MARYLAND.

Typhoid at Warwick.—Dr. Howard Bratton, health officer of Elkton, accompanied by State Inspector Mitten of Baltimore, has made an investigation of the typhoid epidemic in Warwich, Cecil County, where 14 cases are reported, and one death has occurred.

Baltimore.

Pasteur Institute.—There are 18 patients now under treatment at the Pasteur Institute of the City Hospital. This is the largest number yet under treatment at one time.

Colleges.—The introductory lecture at Baltimore University School of Medicine was delivered September 30, on the subject "Something New," by Prof. J. W. C. Cuddy.——The vacancies in the chairs of surgery and therapeutics at the Woman's Medical College have been filled by Drs. Pearce Kintzing and L. Gibbons Smart, respectively.

Death and Disease.—The deaths for the week ended October 4 were 166, being an annual death rate per 1000 of 15.55. There were 19 deaths from consumption, 11 from typhoid fever, and 4 each from pneumonia and diphtheria. Of typhoid fever 56 new cases were reported. A few cases were also reported of measles, scarlet fever, mumps and whooping cough.

Heating the Quarantine Hospital.—Dr. Sidney O. Heiskell, city quarantine physician, proposes to overcome the difficulties of heating the Quarantine Hospital, consequent on the scarcity of anthracite coal, by running the pipes from the steam disinfecting plant over to the hospital. This plant burns soft coal, which is likely to be abundantly available.

Changes at Bayview.—At the Bayview Asylum the following changes have been made in the medical staff. Dr. Irving J. Spear, resident physician of the insane department, has resigned, and Drs. C. D. Gruver and P. L. Travers, assistant resident physicians, have resigned to begin private practice. Drs. Samuel Lee Magness and Robert Baker Lawson have been appointed assistant resident physicians.

Personal.—Dr. Henry W. Cook has returned from Canada and resumed his duties at Johns Hopkins Hospital.——Dr. Frank G. Mayer has returned from a visit to the Yellowstone Park and the Pacific Coast.——Dr. M. H. Carter has gone on a trip to California, Salt Lake City and other points in the West.——Dr. Howard A. Kelly has returned from his vacation, part of which was spent in moose hunting in New Brunswick.——Dr. Harry Friedenwald has been elected professor of diseases of the eye and ear in the College of Physicians and Surgeons, succeeding his father, the late Dr. Aaron Friedenwald.——Dr. William F. Pentz has been appointed deputy collector of internal revenue of Baltimore.——Dr. William Lee Howard has returned from a five months' cruise in his schooner yacht. Most of this time was spent off the coast of Newfoundland and Labrador.

MINNESOTA.

Personal.—Dr. George R. Curran, Worthington, has returned after a year of study abroad and will locate in Mankato.

To Found Convalescent Hospital.—A deed was filed at Marshall, October 2, whereby John M. Burke conveys to the Winfield-Masterson-Burke relief foundation $4,000,000 worth of real and personal property, to be used as an endowment for a hospital for convalescents.

Hospital Opened.—The new St. Luke's Hospital, Duluth, was opened for inspecion by the public, September 30, and patients were transferred from the old building on the following day. The new building has 28 private rooms in addition to the wards, and will accommodate 75 patients. The building and site have cost $100,000.

College Opens.—The College of Medicine and Surgery of the University of Minnesota opened for the season, September 22, with a lecture by Dr. John W. Bell, on "The Study of Internal Medicine." The registration this year will probably not be as large as last year. The old men are returning in good numbers, but the freshman class will probably be smaller than usual. This is due to the fact that one year's work in the academic course is required this year.

Bacteriologist Ill with Glanders.—Dr. Orianna McDaniel, assistant bacteriologist in the State Board of Health Laboratory at the University of Minneapolis, is suffering from glanders, contracted while she was engaged in bacteriologic investigation at the laboratory on June 30. Being given prompt attention she made an apparently complete recovery, but recently a relapse occurred, and the general condition is now far from satisfactory, though the medical attendants are in doubt whether the present illness is altogether chargeable to the original trouble.

NEW YORK.

Tuberculosis Hospital Contracts Awarded.—The state tuberculosis hospital commission has awarded the contracts for the hospital at Raybrook, Essex County, near Saranac, at a price of $54,880.

Buffalo.

Colon Bacilli in Niagara River.—The city bacteriologist, Dr. Bissell, reports having found bacilli of the colon group in the Niagara river water supply. As this is indicative of sewage contamination Health Commissioner Green again advises the boiling and filtration of all water.

Personal.—Dr. and Mrs. Matthew D. Mann have returned from Europe.——Dr. and Mrs. Herman Mynter have returned from a trip abroad.——Drs. Edward J. Meyer, Henry C. Buswell, John Mesmer and James Whitwell have returned from a fishing excursion in Northern Canada.——Dr. Alexander McNeil Blain has returned from Europe.

Anti-Tuberculosis Crusade.—The Buffalo Anti-Tuberculosis Society, under the chairmanship of Dr. Benjamin G. Long, recently met and strongly endorsed the health commissioner for sending to all tuberculosis cases the instructions for their care and methods of disinfection for the sick room and for houses after the death of such patients. Churches and societies are again asked to invite any of the corps of speakers to address them on the nature and prophylaxis of tuberculosis. Last season many of the larger societies and orders were addressed, and much interest was shown by the lay hearers in the subject discussed.

Hospital Wins Suit.—The Buffalo Hospital of the Sisters of Charity is defendant in an action for $10,000 damages brought by Lena Duman as administratrix of the estate of Frank Duman who died at the hospital in August, 1901. It is claimed by the widow that Duman went to the hospital to be treated for delirium tremens and engaged board and treatment for $7 per week. She says that he was given a room on the second floor, and that owing to lack of attention he was allowed to jump out of a window, August 15, and fell thirty feet, sustaining injuries which were fatal. The hospital authorities admitted in answer to the charges that Duman fell thirty feet, but deny the other allegations of the plaintiff, and the court sustained the hospital authorities and non-suited the plaintiff, who will appeal.

New York City.

Bequest to Hospital.—By the will of the late Samuel D. Babcock, $20,000 is bequeathed to St. Luke's Hospital.

Site for Rockefeller Institute.—It is announced that by the sale of a building at the corner of Madison Avenue and Forty-second Street to Dr. Andrew H. Smith and Davison H. Smith for $250,000, another portion has been added to the site on which the Rockefeller Institute for Medical Research is to be erected.

Police Patent Medicine Testimonials Rebuked.—Fifteen policemen attached to various precincts have been ordered to appear for trial at police headquarters on charges of "attempts to influence the public." The charges grew out of advertisements in which appear photographs of 15 policemen accompanied by as many letters setting forth the alleged beneficial effects of a certain nostrum.

Scurvy on In-Coming Ship.—A British ship reached this port after a voyage of 197 days from Japan. The great length of the voyage was attributed to the foul bottom of the ship, long calms and baffling winds. The regulation supply of lime-juice gave out when the voyage was only half completed, and on reaching this port seven of the men were in their bunks helplessly ill with scurvy, while many others of the crew were afflicted with that temporary form of evening blindness known familiarly on the tropical seas as "moon blink."

OHIO.

Entire Hospital Staff Resigns.—It is announced in the daily press that the staff of physicians, thirty-two in number, of the Toledo Hospital, resigned in a body because the board refused to dismiss the superintendent, Miss Kent.

Fugitive Captured.—Dr. John C. Modrack, Marion, who for the last six months has been a fugitive from justice, under an indictment for an attempted criminal operation which resulted in the death of Miss Laura E. Hite, was arrested in Chicago September 9.

College Openings.—The medical department of Western Reserve University opened without formal ceremonies, October 1.——Toledo Medical College opened its twenty-third annual session September 25. The opening address was by Dr. Albert L. Steinfeld, on "Recent Advances in Medicine."

Personal.—Dr. Ezekiel M. Foster, Portsmouth, with his wife and daughter, sailed, October 7, for Europe, where Dr. Foster will spend a year in study and research.——Dr. W. C. Ellis, Sardinia, will take charge of the practice of Dr. Foster of Portsmouth during the absence of the latter in Europe.

Acquitted on Bribery Charge.—Dr. Frank W. Daykin, Cleveland, who has been on trial charged with having given Councilman Charles A. Kohl $2000 as a payment on a $5000 bribe for his vote on a natural gas ordinance, was declared not guilty of the charge by a jury in the Criminal Court, October 7.

Youngstown Quarantines Against Cleveland and Pittsburg.—The Youngstown board of health has practically established a quarantine against Cleveland and Pittsburg on account of smallpox there. A resolution was passed by the board asking citizens to refrain from visiting either city except on business.

PENNSYLVANIA.

Philadelphia.

A home for convalescent children is to be erected at Gynedd by Mrs. H. P. McKean and Mrs. F. E. Bond of Philadelphia.

New Hospital Buildings Nearly Completed.—The new buildings for the Children's Hospital and for the Hospital for Diseases of the Skin, departments of the Philadelphia Hospital, are nearing completion; but for lack of heating facilities neither these nor the Maternity Hospital building, recently completed, can at present be used. The Department of Charities has applied to councils for $25,000 for heating plants.

Personal.—Dr. and Mrs. J. William White recently returned from a four months' trip to Europe, during which they visited Sir Frederick and Lady Treves.——Dr. Horatio C. Wood, professor of therapeutics and materia medica of the University of Pennsylvania, lately returned from Europe after an absence of nearly a year.——Dr. George A. Pfahler, for several years assistant chief resident physician of the Philadelphia Hospital, has voluntarily resigned the position. No one has yet been elected to fill the place, although there are many applicants.——Dr. Woody, of the Municipal Hospital, and Dr. Ralph Coombs, of the Kensington Hospital for Women, are the two new members of the staff of the German Hospital.

The free hospital for poor consumptives, which has a sanatorium at White Haven, Pa., is planning to do more active work in Philadelphia against the disease. An effort is to be made especially to secure systematic registration of consumptives, thus giving opportunity for help to such patients for the protection of themselves, their families and the public: also to protect against contaminated houses. It is the purpose also to establish clinics solely for the treatment of phthisis, and to distribute pamphlets, particularly in the slums, stating the causes of the disease and explaining the methods of precaution against its contagion. Effort will be made to carry the movement throughout the state. An aid to the cause is the recent gift by Mrs. Thos. L. Kane of a house on the summit of the Alleghany Mountains at Kane, Pa., to be used by the Summit Hospital of that place for the care of consumptives.

Medical College Year Begins.—On October 1 the seventy-eighth session of Jefferson Medical College was opened with an address by Hon. William Potter, president of the Board of Trustees, and an introductory lecture by Dr. Henry C. Chapman. The enrolment of students was announced as about 750.——On the same evening the Medico-Chirurgical College held its opening exercises. Introductory addresses were made by Dr. F. Savary Pearce and by Dr. Seneca Egbert, dean. The new dispensary and laboratory building has cost more than $150,000. It is of steel and brick-arch fire-proof construction, five stories high. The first floor is devoted to the medical, surgical and dental dispensaries of the hospital. On the second floor are the dental school and prosthetic laboratory, and on the third, fourth and fifth floors, respectively, are the chemical laboratory, the pathologic and bacteriologic laboratories and the histologic laboratory and dissecting room. Each laboratory is furnished with individual apparatus for from 50 to 100 students.

Pittsburg.

West Penn Medical Opens.—The medical department of the Western Pennsylvania University began its new year October 1 with a freshman class of nearly 200.

Addition to Hospital.—A contract for the erection of an operating room, as an improvement to the Reineman Maternity Hospital, has been awarded. The addition is to be of brick and will cost about $5000.

Efficiency of Vaccination.—All pupils attending public, parochial or private schools are again to be examined by representatives of the Bureau of Health to ascertain the efficiency of their vaccinations, or to be vaccinated if not already protected.

Bill for Emergency Hospital.—At the request of a number of Pittsburg's physicians a bill will be introduced into the legislature to provide for an Emergency Hospital. The purpose of such a hospital is particularly to care promptly for the many accident cases happening in Pittsburg and its vicinity.

GENERAL.

Col. Smart Goes to the Philippines.—Col. Asst.-Surg.-Gen. Charles Smart, U. S. A., has been ordered to the Philippines as chief surgeon and leaves shortly for the islands.

Cholera Worse in Iloilo.—The conditions in the province of Iloilo, island of Panay, P. I., are reported so serious from the epidemic of cholera that towns are being deserted and ordinary sanitary measures are impossible.

Dr. Lippitt Retired.—Surgeon Thomas McC. Lippitt, U. S. N., has been placed on the retired list on account of physical disabilities incurred in the line of duty. Dr. Lippitt has been in the navy since June, 1898, having been appointed from Virginia. He was surgeon of the gallant band of marines which helped to guard the legations in Pekin during the Boxer troubles, and was advanced in grade in recognition of his efficient services in that campaign.

Dr. Adolph Lorenz, professor of orthopedic surgery in the University of Vienna, Austria, who comes this week to Chicago on a professional errand, has a world-wide reputation as one of the greatest authorities in his specialty. Beginning his professional career as assistant in the surgical clinic of Professor Albert, he was obliged to give up general surgery on account of an intractable eczema of the hands caused by the antiseptic solutions in constant use in the clinic. Influenced by his chief, who had given considerable attention to scoliosis, he turned to orthopedics and first became more generally known by his prosecution and completion of the studies begun by Professor Albert, on this same subject. Professor Lorenz is best known as the author of a method of bloodless reduction of congenital hip dislocation—to treat a case of which is his present errand. Few perhaps know that before he developed this treatment he practiced the cutting method of Hoffa and added important details to its technic. Besides these better-known works he has contributed to other orthopedic problems and devised a number of deformity apparatus.

CANADA.

Typhoid at Winnipeg on the Increase.—The Winnipeg General Hospital is at present crowded with typhoid patients, many of whom come from outside points.

The Toronto Orthopedic Hospital was opened October 5. Dr. B. E. McKenzie and Dr. H. P. H. Galloway will be the surgeons in charge. The hospital has at present thirty inmates. The building and equipment cost $40,000.

Personal.—Dr. James Bruce, who has been a house physician in the Montreal General Hospital, has gone to Sydney, C. B., to practice. Dr. Bruce graduated with honors at McGill in June, 1901, being first honor man and final prize man in medicine.

Appointments.—Dr. L. W. May, a recent graduate of McGill University, has been appointed medical officer of the new Infectious Diseases Hospital at Ottawa.——Dr. W. H. Cullen, another recent graduate of McGill, has been appointed clinical assistant in the Manhattan State Hospital, Ward's Island, New York.

Montreal General Hospital.—The Montreal General Hospital report for September shows that during that month 236 patients were admitted into the wards, 214 were discharged, and there were 17 deaths. The average daily sick in residence was 179, the highest on any one day being 193. The out-door consultations numbered 2664.

Action for Fee.—Three thousand dollars for medical services is asked by Dr. A. Marien, Montreal, in an action begun against Mr. A. A. Lussier, Varennes, Que., who was shot and seriously wounded last April by his son. Dr. Marien says that he attended the patient for over a fortnight, and had to have a substitute to deliver his lectures at Laval University. The account is contested and an offer of $1000 has been made.

College Re-openings.—The opening lecture at Trinity Medical College was delivered by Dr. George A. Bingham, professor of applied anatomy, September 24, who contrasted the lives of the scientific man, Sir James Simpson, and a contemporary, a London quack of considerable repute, drawing deductions therefrom. The opening lecture at Toronto University in the medical department, was delivered, October 2, by Dr. J. J. McKenzie, professor of pathology, who dealt with the life and work of the celebrated German pathologist, Virchow. Both colleges have their usual quota of freshmen.

Diseased Immigrants.—The recent charges in a New York paper that there were associations in Canadian cities for the purpose of smuggling diseased immigrants and Chinese into the United States, has brought up in Montreal, again, the whole question of allowing diseased immigrants into Canada and of the permitting of their being dumped into Montreal when rejected by the immigration official of the United States, located in that city. It will probably be the means of opening the eyes of the Dominion government to the fact that they had better follow in the footsteps of the American government rather than permit these undesirable people landing at Canadian ports and gaining access to the country without having passed through a rigorous medical examination. Montreal is calling on the Canadian government to protect her from the influx of contagiously-diseased aliens.

Quebec's Medical Board and the Increased Standard.—McGill is particularly wrathy over the proposed new regulations of the Provincial Medical Board with regard to the admission of candidates to the study of medicine in that province. Dr. E. P. Lachapelle, so loud has been the clamor in the lay press, has had, as president of the board, to issue a letter of explanation with regard thereto. The matter first came up a year ago when Dr. Brophy, of the board, proposed that the privilege of studying medicine should be accorded only to B. A.'s. Explaining the requirement of a "Cours classique complet," Dr. Lachapelle says that it is for the French people, and whatever the English consider an equivalent will be accepted from them. The chief object is to stop the system by which boys are stuffed for examinations. In an interview accorded the lay press, Dr. Ruttan, late registrar of the medical faculty, and now professor of chemistry, states, in view of McGill's combined arts and medical course of six years, that the endorsement of the resolution of the Provincial Medical Board by the legislature would inflict needless hardships on students. In McGill circles it is felt that the resolution was adopted with a view of preventing the working of Dr. Roddick's bill for a Dominion Medical Council in the province of Quebec. Dr. Ruttan states that the English universities in Quebec will vigorously oppose the adoption by the legislature of any such measure.

FOREIGN.

Passow Called to Berlin.—Prof. A. Passow of Heidelberg has been appointed to the chair of otology at Berlin left vacant by Trautmann's death.

Americans to Erect English Army Building.—The new building for the army medical department, to be erected at Woolwich, Eng., is to cost $15,000. The contract has been given to a Pittsburg company.

Argentina Quarantines Against Rio Janeiro.—The Argentine government has decided to impose quarantine on all vessels arriving at Argentine ports from Rio Janeiro, Brazil. This action is taken because of the appearance of several cases of plague in the Brazilian city.

Unethical Ads. in the Daily Press.—A new daily paper, *Die Zeit*, has been founded in Vienna, and the managers announce that no advertisements will be received that conflict with medical standards. They have appealed to the local Medical Chamber for guidance in the matter.

Public Course of Instruction in Disinfection.—The authorities at Breslau have organized a free course of instruction in measures for disinfection. It is held at the University Institute of Hygiene and on completion of the six-day course of lectures the candidates pass an examination before the director of the institute and the chief of the city disinfection bureau. They then receive a certificate. The course is proving so popular and so useful that other universities are planning a similar innovation, and many towns without official institutes.

Campaign Against Charlatans in Germany.—The Medical Chamber at Berlin recently secured the condemnation of a charlatan in another town for unwarranted claims in his advertisements. He published among others a certain signed testimonial from a person cured of pulmonary tuberculosis in four months by his remedies. The case was investigated by a committee from the chamber, and the claims shown to be false. The affection was an apical catarrh and had not been entirely cured, while the statements in regard to previous medical treatment were false. A fine of about $75 was imposed.

Virchow as a Historian and Philologist.—*Janus* publishes a list of 72 works on subjects connected with the history of medicine that Virchow contributed to literature. He used to say that his *Archiv* contained more historical works than any other medical journal, and in fact was for years their only refuge. He was always interested in the science of language, and his article on medical terminology, published in the *Berliner klin. Wochenschrift* in 1875, is a classic, applicable to all times and sciences. He traced his name to a small village and lake in Pomerania, both called Virchow. It is probably of Slavonic derivation.

Convalescent Homes in France.—France has had these institutions since 1650, but Germany has only recently recognized their importance and introduced them. The two near Paris are the Vincennes, with 460 beds and 84,000 inmates in the course of the year, and the one at Vesinet with 330 beds and 64,000 inmates. There are also two smaller ones at Roche Guyon and Garches. They are all part of the general public hospital system, the "Assistance Publique." Six other cities have similar establishments, and there are a number of private ones. The French seem to consider that the care of the sick poor should be extended to the regaining of the working capacity. A circular has recently been issued by the authorities enjoining this point of view on the hospitals and physicians employed to look after the sick poor. The large country hospitals are to provide a convalescent home and the smaller ones to set apart a ward for the purpose. The expense is to be shared by the local and national boards as soon as the necessary legislation is completed.

Cuba's Health Good.—There is no lapse in the reforms and sanitary improvements which the United States provisional government over Cuba established. Dr. Charles Finlay, the new sanitary officer of Havana, reports the mortality rate of that city for August to be the smallest since April. There was decreased mortality, Dr. Finlay says, "in almost every group of diseases which are amenable to sanitary improvements." The most important and interesting passage in the report is that with which it concludes. It runs as follows:

> Havana, and, so far as we have been able to ascertain, the rest of the island, have continued free from yellow fever and from smallpox, though a fatal case of the former disease came on the steamship *Vigilancia* from Vera Cruz on the 4th of August and died at Las Animas Hospital on the 7th. The success which has so far attended our efforts to prevent the propagation of the disease during the conveyance of patients from vessels in the harbor or from the immigration camp at Triscornia to Las Animas Hospital, as well as during their detention at that hospital, in this season of the year, is not only highly satisfactory to us as showing that our vigilance has not abated since the inauguration of the Cuban Republic, but also as an additional demonstration of the fact that in order to attain that result all that is needed is to guard the patient from being bitten by mosquitoes.

For all this the United States can take some credit, for, though Dr. Finlay has been a resident of Havana for many years, he was born and educated in this country.

LONDON LETTER.

Finger Prints as Evidence.

In the case of a man charged with burglary finger prints were given in evidence. This is the first occasion on which this system of identification has been used in the courts of justice in this country, although it has been employed on a large scale for identifying habitual criminals in India. In this case the person committing the burglary had left the print of his fingers and left thumb on the newly-painted window-sills. An expert took photographs of those prints, and on examining the finger-prints in the possession of the police he came to the conclusion that the prisoner was concerned in the burglary. The jury, who examined the photographs with much interest, found the prisoner guilty, and he was sentenced to seven years' penal servitude.

Death Following a Mosquito Bite.

A man aged 43, a gatekeeper in the service of the Hon. Artillery Company, while engaged at the company's headquarters at Finsbury, London, was bitten on the elbow by a mosquito. Considerable swelling and inflammation followed, septic pneumonia set in and death soon ensued. The coroner's jury brought in a verdict of death from septic poisoning following a mosquito bite.

Cancer Research.

At a meeting of the executive committee of the Cancer Research Fund, under the direction of the Royal Colleges of Physicians and Surgeons, it was decided to issue advertisements in the medical journals inviting applicants for the post of general superintendent of cancer investigation. The duties of the office will include: 1, the general direction of laboratory investigation; 2, the supervision of workers appointed by or receiving grants from the committee; 3, the collection of statistical, dietetic, topographical and other information; 4, the organization of a system of correspondence with home, Colonial, Indian, and foreign laboratories and workers; 5, attendance at the meetings of the executive committee or any committee appointed by them for special purposes relating to the investigation. The general superintendent may also be appointed director of the central laboratory. It was further decided that application should be made to the Colonial Office for assistance in obtaining information as to the prevalence of cancer in the various colonies of the British empire, the mode of life, food and general environment of the inhabitants of these colonies, and other circumstances that might seem to have a bearing on the question of the origin of cancer. It was also agreed that enquiries should be made as to investigations on cancer now being pursued in laboratories in the United Kingdom, and preliminary arrangements for starting laboratory work in the examination hall, Victoria embankment, were discussed. The authorities of the Cancer Hospital have entirely reorganized their pathologic department, with the view of undertaking researches of the most modern lines into the etiology and treatment of cancer. In addition to their present accommodation, a new laboratory is being fitted up with all requisite appliances for investigation, and will shortly be in working order. A pathologist is to be appointed at a salary of $1250 a year, who will work at some of the many problems connected with cancer in conjunction with and under the direction of Mr. H. G. Plimmer, who has been pathologist for many years to the institution, and who now becomes director of the laboratory.

Correspondence.

Paraffin Will Not Prevent X-Ray Burns.

CHICAGO, Sept. 12, 1902.

To the Editor:—The statement has recently appeared in several medical journals and in the lay press, and Dr. J. Mount Bleyer, New York, is given as authority for it, that a layer of paraffin interposed between an *x*-ray tube and the surface to be exposed will prevent *x*-ray burns. To test this matter I have performed the following experiment: I have been exposing to *x*-rays daily an area the size of a quarter, in the center of which was an epithelioma the size of a little finger nail. The surrounding surface has been protected by sheet lead, the surface exposed has been covered each time with a layer of paraffin 1/16 inch thick. In spite of this paraffin the surface now shows a well-marked *x*-ray dermatitis, not more or less than I would expect without the paraffin. This shows conclusively that an *x*-ray burn can be produced under paraffin; and I am willing to assert further that the paraffin has absolutely no influence in preventing *x*-ray effects on tissues.

The idea that paraffin will furnish a protection against *x*-ray burns is doubtless a lineal descendent of the suggestion that such burns may be prevented by vaselin, which was long since proven false. Such inaccurate statements are most mischievous. For example, the statement that *x*-ray burns could not be produced with static machines has probably been the cause of as many *x*-ray burns as any single mistake, and the same may be true of paraffin, if the impression becomes general that it will prevent burns. Operators will go ahead, relying on it for protection, and the false sense of security thus engendered is in itself a factor of great danger. Statements like the above about paraffin are likely to go unrefuted for a long time, because no one has the opportunity or takes the trouble to experimentally establish or disprove them. It is for this reason that I have thought the above experiment worthy of report.

This may not be a bad opportunity to call attention to the fact that there is absolutely no reason to believe that anything which is transparent to *x*-rays will prevent the occurrence of *x*-ray burns. For example, it is widely believed that the interposition of a layer of aluminum, particularly if it is grounded, will prevent *x*-ray dermatitis. I have in numerous cases produced *x*-ray dermatitis on surfaces which have been constantly protected by aluminum, and I have at present a guinea-pig which has a considerable *x*-ray burn that was produced through aluminum, and with the aluminum and the lead plates grounded with a water connection, so that electro-static effects were entirely excluded. I have no hesitation in asserting that I can produce an *x*-ray effect on the tissues through any substance which is not opaque to *x*-rays, whether aluminum, paraffin or what not. The only essential to the production of *x*-ray effects is that the *x*-rays themselves reach the tissues.

Yours truly, WM. ALLEN PUSEY.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

ADVERTISING HIS EQUIPMENT AND ABILITY.

A correspondent sends us a marked copy of the *Mount Ayr* (Iowa) *Journal*, of September 30, from which we quote the following, omitting the names:

"We call special attention to the medical card of Dr. ——— in this paper. The Dr. has added several pieces of furniture to his office of the finest make, thus fitting his office equal to any in the state. The outfit includes a large ——— static electric machine with X-ray attachment, a ——— wall plate battery, and an ——— surgical table of the latest and most complete type made. These were added last week to his well equipped office, and hence is prepared to treat any and all diseases as successful as the physicians in the larger cities."

The exactness and completeness with which the new equipment is named are internal evidence that the editor of the *Mount Ayr Journal* had professional assistance in writing the copy, and that Dr. ——— was not surprised to find it in the paper.

THE PERCENTAGE OF PHYSICIANS IN EUROPE.

Dr. Emil Amberg, Detroit, says: "On page 849, under 'Foreign,' under 'The Percentages of Physicians in Europe,' mistakes must have been made. It *probably* reads for '10,000' inhabitants, and even then, *Vienna* or *Berlin* must be wrong, I think."

Vienna should be 1.3 instead of 13. Otherwise the whole item is as correct as was our authority—the *Wiener klinische Rundschau,* Sept. 14, 1902, page 730. The ratio is to each 1000 inhabitants.

FILES OF MEDICAL PUBLICATIONS TO BE GIVEN AWAY.

Z., of Connecticut, writes: "I have in my possession unbound files of *Medical Record,* JOURNAL A. M. A., *Therapeutic Gazette, American Journal of Obstetrics,* and other journals nearly complete; very few copies missing. These files I will cheerfully donate to any medical college, library or individual who will pay the freight on them. I will pack them and send them to depot. Most of these journals are since 1898." THE JOURNAL will send name and address on application.

State Boards of Registration.

Vermont Report.—Dr. S. W. Hammond, Rutland, secretary of the Vermont Board of Medical Censors, reports the examination held at Burlington, July 9 and 10, as follows: Number of subjects examined, 8; questions, 80; percentage required, 70; written examination; total number examined, 13; number passed, 7; failed, 6. The 7 who passed were graduates of the following colleges: Physicians and Surgeons, New York; University of Michigan; Woman's Medical College, Philadelphia; Laval University; and three from the University of Vermont. The 6 who failed were from the Dartmouth Medical College, Laval University, Baltimore Medical College, University of Vermont and two from the University of Baltimore.

Wisconsin Report.—Examinations by the Wisconsin Board of Medical Examiners were held at Madison, Wis., July 8 and 9, 1902. Percentage required to pass, 75, with no less than 60 in any one branch. Total number examined, 66; passed, 53; failed, 13. The following is a summary furnished us by Dr. *Filip A. Forsbeck:*

PASSED.

Candidate.	Sch. of Pract.	College.	Per-cent.
16	R.	College of Physicians and Surgeons, Chicago.	79.2
18	R.	College of Physicians and Surgeons, Chicago.	88.0
19	R.	College of Physicians and Surgeons, Chicago.	84.6
23	R.	College of Physicians and Surgeons, Chicago.	84.6
24	R.	College of Physicians and Surgeons, Chicago.	83.2
31	R.	College of Physicians and Surgeons, Chicago.	84.2
33	R.	College of Physicians and Surgeons, Chicago.	80.1
36	R.	College of Physicians and Surgeons, Chicago.	81.7
37	R.	College of Physicians and Surgeons, Chicago.	86.7
39	R.	College of Physicians and Surgeons, Chicago.	82.1
40	R.	College of Physicians and Surgeons, Chicago.	82.7
50	R.	College of Physicians and Surgeons, Chicago.	81.1
51	R.	College of Physicians and Surgeons, Chicago.	82.5
54	R.	College of Physicians and Surgeons, Chicago.	85.1
11	R.	Rush Medical College, Chicago	86.0
12	R.	Rush Medical College, Chicago	79.5
13	R.	Rush Medical College, Chicago	82.0
22	R.	Rush Medical College, Chicago	88.7
26	R.	Rush Medical College, Chicago	84.7
29	R.	Rush Medical College, Chicago	85.4
35	R.	Rush Medical College, Chicago	87.5
46	R.	Rush Medical College, Chicago	84.5
47	R.	Rush Medical College, Chicago	77.3
52	R.	Rush Medical College, Chicago	87.1
53	R.	Rush Medical College, Chicago	84.7
55	R.	Rush Medical College, Chicago	85.3
56	R.	Rush Medical College, Chicago	83.0
57	R.	Rush Medical College, Chicago	81.6
58	R.	Rush Medical College, Chicago	84.6
59	R.	Rush Medical College, Chicago	83.1
63	R.	Rush Medical College, Chicago	87.4
65	R.	Rush Medical College, Chicago	92.5
14	R.	Northwestern University, Chicago	85.4
17	R.	Northwestern University, Chicago	82.5
27	R.	Northwestern University, Chicago	79.4
30	R.	Northwestern University, Chicago	82.7
38	R.	Northwestern University, Chicago	89.4
43	R.	Northwestern University, Chicago	86.5
44	R.	Northwestern University, Chicago	82.6
61	R.	Northwestern University, Chicago	89.2
2	R.	Gross Medical College, Denver	76.3
6	H.	Hahnemann Medical College, Philadelphia	87.0
41	H.	Hahnemann Medical College, Chicago	79.1
42	H.	Hahnemann Medical College, Chicago	88.1
28	H.	Chicago Homeopathic College	90.2
20	‡	University of Minnesota	83.2
21	R.	University of Pennsylvania	87.2
45	R.	University of Iowa	76.1
48	R.	University of New York	75.0
64	R.	University of Michigan	86.3
32	R.	Trinity Medical College	81.3
49	R.	Marion Sims Medical College, St. Louis	81.3
60	R.	St. Louis College of Physicians and Surgeons.	79.2

FAILED.

Candidate.	Sch. of Pract.	College.	Per-cent.
1	H.	Hahnemann Medical College, Chicago	*76.6
3	O.	American School of Osteopathy	*82.0
4	O.	American School of Osteopathy	67.3
5	H.	Chicago Homeopathic Medical College	69.0
15	H.	Chicago Homeopathic Medical College	72.2
7	†	College of Medicine and Surgery, Chicago	73.1
8	E.	Bennett Medical College, Chicago	*78.1
9	R.	Keokuk Medical College (Iowa)	68.4
10	‡	University of Minnesota	73.7
25	R.	Rush Medical College	*77.7
62	R.	Rush Medical College	71.6
34	R.	Marion Sims Medical College	75.1
66	R.	Chicago Medical College (N. W. Univ.)	67.2

* Conditioned. † Physio-Medical. ‡ The University of Minnesota has both regular and homeopathic schools of medicine.

New Jersey Report.—Dr. E. L. B. Godfrey, secretary of the State Board of Medical Examiners of New Jersey, reports the examination held at Trenton, September 16-17, as follows: Number of subjects examined in, 9; number of questions, 90; percentage required to pass, 75; written examinations; total number examined, 28; passed, 23; failed, 5.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
49	H.	Hahnemann Med. Coll., Philadelphia	1902	75.0
51	R.	University of Vermont	1902	92.7
52	R.	Medico-Chirurgical College, Phila.	1902	80.1
53	R.	Jefferson Medical College, Phila.	1893	79.9
56	H.	Boston University School of Medicine	1900	94.0
50	R.	Baltimore Medical College	1902	83.7

PASSED.

Candi-date.	Sch. of Pract.	College.	Year Grad.	Per-cent.
60	R.	Baltimore Medical College	1902	78.7
62	R.	Baltimore Medical College	1902	75.0
61	R.	Coll. of Phys. and Surgs., Baltimore	1902	89.2
63	R.	Baltimore University School of Med.	1900	75.0
64	R.	University of Turin, Italy	1899	89.1
65	R.	Woman's Medical College, Phila.	1902	92.0
66	R.	Columbian Univ., Washington, D. C.	1897	86.3
54	R.	Columbia University, New York	1901	82.3
67	R.	Columbia University, New York	1900	79.9
68	R.	Columbia University, New York	1902	87.7
69	R.	Dartmouth Medical College	1892	78.8
70	R.	University of Montpellier, France	1889	75.3
71	R.	University of Naples, Italy	1898	81.6
72	R.	University of the South	...	77.5
73	R.	Coll. of Phys. and Surgs., Baltimore	1902	85.1
75	R.	Coll. of Phys. and Surgs., Baltimore	1902	77.0
76	R.	Yale Medical School	1893	82.5
		FAILED.		
55	R.	Baltimore University School of Med.	1898	57.1
57	R.	Shaw University (Leonard Med. Sch.)	1902	64.8
58	R.	Jefferson Medical College, Phila.	1902	69.5
59	H.	Hahnemann Medical College, Phila.	1899	71.1
75	R.	University of Naples, Italy	1888	62.1

Beginning with the examination in June, 1903, each applicant for examination will be required to file with his application a recent photograph of himself, with autograph signature, duly attested under the seal of a notary.

In the matter of interstate reciprocity of medical license, the policy of the board in endorsing the licenses issued by other states whose examining requirements are substantially the same as those of New Jersey, provided that the applicant fully meets the academic and medical requirements of the state, is gaining favor both with the profession and with other state boards. This policy places the admission of an applicant on the basis of his personal fitness and the thoroughness of his examination, which is believed to be the fairest and the most equable method of endorsement so far devised.

Marriages.

O. A. Tooker, M.D., to Miss Myrtle Parker, both of Lansing, Mich., September 25.

James L. Niblack, M.D., to Miss May Brown, both of Lake City, Fla., September 16.

George Mosse Norton, M.D., to Miss Leila Walton, both of Savannah, Ga., October 6.

Joseph Nisbet Le Conte, M.D., to Miss Lillian King, both of Atlanta, Ga., October 8.

Edwin Wilson Rhea, M.D., to Miss Helen Macdougall, both of Oil City, Pa., September 24.

Hugh Cabot, M.D., to Miss Mary Codman Boit, both of Brookline, Mass., September 22.

Otto Floyd Rogers, M.D., to Miss Vesta Triplett, both of Bloomington, Ind., September 24.

Hugh Prescott Ross, M.D., Campbell, Minn., to Miss Claudia Cross of Champion, Minn.

Charles H. Brooke, M.D., to Miss Gertrude F. Hermann, both of Brooklyn, Md., September 24.

Leon F. Richardson, M.D., Terril, Iowa, to Miss Gertrude Shank of Fairfax, Iowa, September 24.

Halvor Holte, M.D., Crookston, Minn., to Miss Henrietta Lunde of Maplebay, Minn., September 25.

Ludwig von Muralt, M.D., Zurich, Switzerland, to Florence Hull Watson, M.D., Farnhurst, Del., October 6.

Samuel R. Cunningham, M.D., Indianapolis, to Katherine D. Johnson, M.D., of Logansport, Ind., September 22.

Leonard C. Berry, M.D., to Miss Marie Orendorf, daughter of Dr. Henry Orendorf, both of Louisville, Ky., September 20.

R. Struble Gibbs, M.D., Reswick, Shasta County, Cal., to Miss E. Florence Owen, of Warsaw, N. Y., at Sacramento, Cal., September 10.

Deaths.

John Byrne, M.D.—In the death of Dr. John Byrne at Montreux, Switzerland, on October 2, the American profession loses one of its most prominent specialists in diseases of women. He was born in Kilkeel, Ireland, in 1825, and pursued his medical studies in Belfast, Dublin, Glasgow and Edinburgh, graduating in the latter city in 1846. He then had about two years' hospital service in his native county during an epidemic of typhoid fever. In 1848 he settled in Brooklyn and was graduated from the New York Medical College in 1852. He was one of the originators of the Long Island College Hospital in 1856. He was a fellow of the New York Academy of Medicine, sometime president of the New York Obstetrical Society, president of the American Gynecological Association, member of the Kings County Medical Society and member of the American Medical Association. He was clinical professor of gynecology in the Long Island College Hospital and surgeon-in-chief to the St. Mary's Hospital for Women, Brooklyn. The cause of his death is supposed to have been melancholia following the death of five of his children from tuberculosis. At the last meeting of the International Obstetrical Congress at Rome, Italy, on September 15, he read a paper on cancer and the best methods of dealing with it.

James W. May, M.D. Cincinnati College of Medicine and Surgery, 1875, dean of the College of Physicians and Surgeons of Kansas City, Kan., professor of ophthalmology and otology, and one of the founders of that institution; a member of the Wyandotte Medical Society and president of the Kansas Medical Society, died at his home in Kansas City, Kan., after a long illness, aged 52.

William R. Kennard, M.D. University of Pennsylvania, Philadelphia, 1860, for twenty-four years a practitioner of Milam County, Texas, and a field and hospital surgeon in the Confederate service during the Civil war, died recently at his home in Rockdale, Texas, aged 68.

Edward Miller Cameron, M.D. College of Physicians and Surgeons, New York, 1853, a member of the New York State Medical Association and the Academy of Medicine, and consulting physician to Trinity Hospital, died at his home in New York City, September 28.

Maximilian Muffat, M.D. College of Physicians and Surgeons, Chicago, 1890, a practitioner of Palatine, Ill., was found dead by the roadside near that village, September 30. He was 50 years old and is supposed to have fallen or to have been thrown from his buggy.

Charles H. Boodey, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1871, a resident of Cochituate, Mass., for nearly thirty years prominent alike as a physician and a citizen, died at his home, September 30, from paralysis, after a long illness, aged 64.

Edwin E. Hunter, M.D. Ensworth Medical College, St. Joseph, Mo., 1899, late city chemist of St. Joseph, a practitioner of Sheffield, Mo., died at St. Joseph's Hospital, Kansas City, Mo., September 24, *from shock following an operation for appendicitis*, aged 38.

Daniel C. Malone, M.D. University of Pennsylvania, Philadelphia, 1869, a member of the Lehigh Valley Medical Association and of the Northampton County Medical Society, died at his home in South Bethlehem, Pa., September 24, from anemia, aged 58.

Edmund B. Scribner, M.D. Kentucky School of Medicine, Louisville, 1885, a prominent physician of Louisville, Ky., died at the Gray Street Infirmary in that city, September 26, from Bright's disease, after an illness of two months, aged 45.

J. L. Carnahan, M.D. Cleveland Medical College, 1874, died at his home in Pittsburg, Pa., September 8, from the result of a fall from a street car the day previous, in which he sustained a fracture of the base of the skull, aged 61.

Watson W. Archer, M.D. Geneva (N. Y.) Medical College, 1867, coroner of Ontario County, N. Y., and for thirty-five years in practice at Clifton Springs, died suddenly at his home in that place, September 25, aged 67.

Adelbert M. Corbett, M.D. Wisconsin College of Physicians and Surgeons, Milwaukee, 1896, died at his home in Marshfield, Wis., from paralysis, September 22, after an illness of five weeks, aged 35.

George J. Peters, M.D. Western Pennsylvania Medical College, Pittsburg, 1887, an esteemed practitioner of Butler, Pa., died in that city, from consumption, September 19, after an illness of a year.

Rufus H. King, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1847, the oldest practitioner of Carroll County, N. H., died at his home in Wolfeborough, September 17, aged 82.

James C. Burch, M.D. University of Maryland, Baltimore, 1862, a practitioner of Baltimore for nearly forty years, died at his home in that city, September 21, from Bright's disease, aged 64.

John J. Haptonstall, M.D. Medical College of Ohio, Cincinnati, 1896, died at his home in Stone Cliff, W. Va., September 26, from the effects of being struck by a train the previous day.

John F. Eddelman, M.D. Rush Medical College, Chicago, 1896, a practitioner of that city, died at Presbyterian Hospital, September 19, from typhoid fever, aged 46.

Seth C. Lacey, M.D. University of Michigan, Ann Arbor, 1861, died at his home in Aberdeen, S. D., September 18, after a long illness, aged 69.

Isaac G. Woolsey, M.D. Cincinnati College of Medicine and Surgery, died from heart disease at his home in Woolsey, Ga., September 11, aged 73.

John Porter Gaston, M.D. Vanderbilt University, Nashville, Tenn., 1901, died at his home near Gilbertsboro. Ala., September 20, aged 35.

Jacob Eisenstadt, M.D. Russia, 1887, a Denver physician, died recently at Redding, Cal., where he had gone on account of declining health.

James Francis Hamilton, M.D. University of Pennsylvania, Philadelphia, 1893, died at his home in Philadelphia, September 1.

John S. Shepherd, M.D. State University of Iowa, Iowa City, 1875, died at his home in Postville, Iowa, August 28, aged 76.

Arthur E. Nichols, M.D. Bellevue Hospital Medical College, 1879, died at his summer home, Charlotte, N. Y., September 28, aged 48.

Alfred L. Gaston, M.D. Vanderbilt University, Nashville, Tenn., 1891, died at his home in Marbuts, Tenn., September 23.

Job S. Coggeshall, M.D., 1874, died at his home in Ogden, Ill., September 14, from consumption, after a long illness.

Deaths Abroad.

Dr. Alcina y Rance, professor of therapeutics and materia medica in the Medical Faculty of Cadiz.——**Dr. Alexander William Michael von Hasselt**, one of the oldest medical officers of the Dutch army, aged 88.——**Dr. Josef Bergson**, formerly privat docent of internal medicine in the University of Berlin, nearly 90.——**Dr. P. Delacour**, director of the Medical School of Rennes, aged 76.——**John Climenson Day**, M.R.C.S. and L.S.A., 1846; M.D. Lond., 1884, died from lymphadenoma, August 17, aged 78.

Dr. J. Unterlugauer, who has lived at Graz since his retirement from active life in 1899. He was a medical officer in the Austrian Army until entrusted with the task of creating a sanitary organization in Bosnia and Herzegovina. As the result of his efforts these countries have now a model sanitary organization, smallpox has been exterminated and hospitals erected in every province, of which the Sarajevo national hospital is said to be a "European model institution."

Thomas Frederick Grimsdale, M.R.C.S. Eng., J.P., one of the best-known practitioners of Liverpool, died at his home in Hoylake, August 29, aged 79. He made a specialty of obstetrics and gynecology, and lectured for twenty years on these subjects in the Liverpool School of Medicine. His most notable operative achievement was the enucleation of a uterine fibroid, in 1857, one of the earliest successful cases on record.

Arthur Barry Blacker, M.R.C.S. Eng., 1884; L.R.C.P. Lond., 1886; M.D. Durham, 1890, superintendent of the *x*-ray department, St. Thomas' Hospital, London, and the Hospital for Consumption, Brompton, died, September 10, after a long illness, aged 40.

Dr. Adolfo Targioni-Tozzetti, Medical Faculty of the University of Florence, Italy, 1848, emeritus professor of comparative anatomy and the zoology of the invertebrates, in his alma mater, died at Careggi, September 18, aged 79.

George Mickley, M.A., M.B., M.E. Cantab., M.S.A., a specialist in nervous and mental disease, died at his home in Saffron Walden, August 10.

Miscellany.

Case of Naphthalin Cataract in Man.—A. Lezenius of St. Petersburg reports the first case of an actual cataract produced in man by ingestion of naphthalin, confirming the results obtained on animals. In the experiments in this line 1 gm. of naphthalin per kilogram of body weight of the animals induced a cataract formation. In the case described the patient was a pharmacist 36 years old, robust and eyesight normal. A physician prescribed for him, in 1900, naphthalin in the dose of 5 gm. to 200 gm. castor oil as he exhibited symptoms of an inflammation of the bowels. He took the whole amount in thirteen hours at one-hour intervals. He awoke next morning with pain in the bladder and found that he could scarcely see. The perinuclear cloudiness of both lenses had increased by the ninth hour until he could only count fingers at 4 feet. Reading and writing were impossible. The cloudiness has persisted unchanged, the first phase of zonular cataract. It had not been operated on at the time the article appeared in the *Klin. Monatsblatt f. Augenhk.*

Etiology and Treatment of "Tics."—H. Meige of Paris has been devoting much time and study to the essence of "tics" and their treatment. He has recently published a work of 640 pages on the subject and in an address at the French Neurologic Congress in August proclaimed the chief results of his research. He says he has established that a "tic" is a psycho-motor trouble, in which the cerebral cortex is always involved to a certain extent. In this it differs from spasms, which are merely reflex manifestations of spinal-bulbar origin. A tic must be regarded as a functional act whose irregularity and inappropriateness depend on psychic disturbances. There is, therefore, a physiologic and a psychologic factor in every tic and treatment should be guided by this fact. Attentive surveillance, training of the spasmodic act under systematic direction and repetition, with suggestion and other psychic measures, ensure gratifying results.

Book Notices.

A Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A. M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. New (3d) Edition. Enlarged and Thoroughly Revised. In One Very Handsome Octavo Volume of 756 Pages, with 474 Engravings, of Which 60 Are in Colors and 22 Colored Plates. Cloth. Price, $5.00 net. Philadelphia and New York: Lea Brothers & Co.

A new edition of a book is too often only a reprint of previous editions with just enough "revision" to eliminate error. Hence, when one picks up a new edition of a work one is prepared to find the same old book. In this instance, however, a first glance shows that Dudley has more than revised his book; he has given us so much new matter and rewritten so much of the old that it is practically a new work. Some of the chapters are entirely new, and many have been rewritten. In the matter of illustrations, there is a decided improvement. Many of these are in colors and not a few of the old black and white drawings have been discarded and replaced by new and better ones. As a rule the major and most of the minor operations are illustrated with drawings to show the technic step by step. Thus curettage is illustrated by five drawings, supravaginal hysteromyomectomy by twelve, and vaginal hysterectomy by fifteen. All of the drawings and colored plates are beautiful, but what is of most importance, they are practical and helpful to the student in that they graphically carry to the mind through the eye detail in technic that is impossible to understand and appreciate from the text. The six colored plates giving in detail the technic of vaginal hysterectomy are deserving of the highest commendation both for their artistic beauty and for their practical value. Dudley's book has always been held in high esteem both by the specialist and by the general practitioner who is compelled to do a certain amount of gynecologic work, and this edition will, we are sure, make it still more popular.

Grayson's Diseases of the Nose, Throat and Ear. A Treatise on the Diseases of the Throat, Nose and the Associated Affections of the Ear. By Charles P. Grayson, M.D., Lecturer on and Instructor in Laryngology, in the Medical Department, University of Pennsylvania. In One 8vo Volume of 549 Pages, with 129 Engravings and 8 Colored Plates. Cloth, $3.50. Philadelphia and New York: Lea Brothers & Co. 1902.

The relation of diseases of the ear to the nose and throat is so intimate that the presentation of the whole subject in a single work is very acceptable. While the work presents little that is especially new or original, at the same time it is practical and instructive. Instead of giving the treatment of these diseases exhaustively, the author dwells only on such treatment as he has found most satisfactory. While this enables the reader who cares to do so to follow closely in the lines recomended it is disappointing to the practitioner who is looking r helpful ideas from others. The book will be particularly luable to the beginner who wishes a terse description. It is ell printed and would be a valuable addition to the library f most practitioners.

The Medical Directory of New York, New Jersey and Conecticut. Volume IV, 1902-1903. Pp. 958. Price, $2.50. Pubshed by the New York State Medical Association, 64 Madison Ave., ew York.

To say that the last issue of the New York, New Jersey and onnecticut Directory is as good as the preceding ones is all hat need be said. The general plan of arrangement is ideal, nd makes reference to it easy and satisfactory. The use of ifferent colored paper for different lists is excellent. All inormation in regard to medical laws, hospitals, dispensaries, nedical colleges, societies and associations with lists of memers as well as a large amount of other information is given. hose who have had the responsibility of getting up this direcory are deserving the highest praise, and should be supported y the profession of the states covered. We hope the time will oon come when other state bodies will take up this work.

Societies.

COMING MEETINGS.

Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

Conference State and Provincial Boards of Health of North America, New Haven, Conn., Oct. 28-29, 1902.

Oklahoma Territory Medical Association, Guthrie, Nov. 11, 1902.

Southern Surgical and Gynecological Association, Cincinnati, Nov. 12-14, 1902.

Medical Society of the Missouri Valley.—In the report of the annual meeting of this society, the new secretary was given as Dr. Wood, Sioux City. Dr. Charles Wood Fassett, St. Joseph, was elected secretary of the society.

Carroll County (Ill.) Medical Society.—This society met at Mount Carroll, September 16, and elected Dr. Joseph Haller, Lanar, president; Dr. Frederick H. Snow, Chadwick, vice-president, and Dr. Henry S. Metcalf, Mount Carroll, secretary.

East Tennessee Medical Association.—This association met at Morristown, September 25, and elected Dr. William A. Applegate, Chattanooga, president; Dr. Charles J. Broyles, Johnson City, secretary, and Dr. William J. Mathews, Johnson City, treasurer.

Shiawassee County (Mich.) Medical Society.—This society was organized at Owosso September 30, with the following officers: President, Dr. Dryden H. Lamb, Owosso; vice-president, Dr. R. H. Scott, Laingsburg; and secretary, Dr. Charles Shickle, Owosso.

Harlem (N. Y.) Medical Association.—The annual election resulted in the selection of the following officers: Dr. Edward L. Cocks, president; Dr. William H. Luckett, vice-president; Dr. Percy H. Fridenberg, secretary, and Dr. Israel L. Feinberg, treasurer.

Washington County (Minn.) Medical Society.—This society was organized at Stillwater, September 24, with the following officers: Dr. Willis H. Pratt, president; Drs. E. O'Brien Freligh and Burton J. Merrill, vice-presidents, and Dr. James H. Haines, secretary and treasurer.

The Association of Hospital Superintendents of the United States and Canada.—This association will hold its fourth conference October 14, 15 and 16, in Philadelphia. Dr. Jesse T. Duryea, general medical superintendent of hospitals, Brooklyn, is president of the association.

Minnesota Academy of Medicine.—At its meeting in Minneapolis, October 1, the academy elected Dr. J. Warren Little, Minneapolis, president; Dr. William Davis, St. Paul, vice-president; and re-elected for the fourteenth time, Dr. Richard O. Beard, Minneapolis, secretary-treasurer.

Somerset County (Me.) Medical Association.—At the thirty-eighth annual meeting of this organization, held in Fairfield, September 24, Dr. Warren G. Sawyer, Madison, was elected president; Dr. John L. Pepper, Madison, vice-president, and Dr. Howard C. Taggart, Skowhegan, secretary.

McLeod County (Minn.) Medical Society.—This society perfected its organization at a meeting held in Glencoe, October 1, and elected the following officers: Dr. Kee Wakefield, Hutchinson, president; Dr. David W. Bolles, Brownton, vice-president, and Dr. Frank E. Burch, Glencoe, secretary.

Wayne County (Mich.) Medical Society.—Almost 200 physicians of Detroit and Wayne County met at Detroit, October 2, and elected the following officers of the Wayne County Medical Society: Dr. Frank B. Tibbals, president; Dr. Charles G. Jennings, vice-president, and Dr. Hugh Mulheron, secretary, all of Detroit.

Oconto County (Wis.) Medical Association.—The physicians of Oconto County met at Oconto Falls, September 25, and perfected the organization of a county association. Dr. Herman F. Ohswaldt, Oconto Falls, president; Dr. O. H. Arndt, Oconto Falls, vice-president; Dr. A. S. White, Gillet, secretary, and Dr. J. C. Grant, Lena, treasurer.

Beth Israel Hospital Alumni Association.—This society has recently been organized in New York, to promote social intercourse among its members, and to advance the science of medicine and the art of surgery, with the following officers: Dr. Abraham Hymanson, president; Dr. George S. Mills, treasurer, and Dr. Meyer Rabinovitz, secretary.

Laramie County (Wyo.) Medical Association.—This society met for organization at Cheyenne, September 27, adopted the constitution and by-laws suggested by the American Medical Association for county organizations, and elected Dr. William W. Crook, president; Dr. Amos W. Barber, vice-president; Dr. William A. Burgess, secretary, and Dr. William A. Wyman, treasurer, all of Cheyenne.

Tenth District (Mich.) Medical Society.—A meeting was held at Grayling September 22, by the registered physicians of Roscommon, Crawford, Otsego, Montmorency, Oscoda and Ogemaw counties, for the purpose of forming a district medical society. The organization was effected by the election of the following officers: President, Dr. S. N. Insley, Grayling; vice-president, Dr. William H. Witter, West Branch; secretary, Dr. Clifford C. Curnalia, Roscommon, and treasurer, Dr. H. B. Kiehle, Rose City.

Central New York Alumni Association of Albany Medical College.—The second annual meeting of this association was held in Syracuse, September 24. The following officers were elected: Dr. Charles B. Tefft, Utica, president; Drs. Thomas P. Scully, Rome, Frank L. Harter, Syracuse, Irving S. Edsall, Middleville, George P. Johnson, Mexico, Walter K. Quackenbush, Trenton, and George F. Gardner, Ellisburg, vice-presidents; Dr. Frederick H. Brewer, Utica, secretary, and Dr. Earl D. Fuller, Utica, treasurer.

St. Joseph (Mo.) Medical Society.—The regular bi-monthly meeting of the society was held September 23. The most important business transacted was the taking of the necessary steps to affiliate the local organization with the state medical association. To this end a committee was appointed to revise the local constitution and by-laws. At the meeting of the state association last May a new constitution was adopted, which made necessary a change in the local by-laws. This change, if adopted by the society, will make it eligible for membership in the state organization.

Central Tri-State Medical Society of Kentucky, West Virginia and Ohio.—This society holds its 7th quarterly meeting at Huntington, W. Va., October 16. On the program we notice "Forty Years' Changes in Surgical Science and Art," by Dr. Phineas T. Connor, Cincinnati; "The Causal Relation of Defective Eyesight to Some Morbid Nervous Phenomena," by Dr. Allen P. Banfield, Buchanan, Ky., and the exhibition of specimens and photographs by Dr. B. Merrill Ricketts, Cincinnati. At the meeting held July 17, The Journal of the American Medical Association was adopted as the official organ of the society.

International Surgical Association.—A large number of foreign surgeons who were present at the Belgian Congress of Surgery voted the organization of an international society, to be composed of the surgeons of the world. The following were appointed a committee to prepare the constitution and by-laws of the new association: Roswell Park, for the United States; Broca, for France; Sonnenburg, for Germany; Giordano, for Italy; Reginald Harrison, for England; Gussenbauer, for Austria; Bloch, for Denmark; Willems, for Belgium; Da Isla, for Spain; Djemil Pasha, for Turkey; Rotgans, for Holland; Jonnesco, for Roumania; Williaminoff, for Russia; Reverdin, for Switzerland, and Borelius, for Sweden. It is proposed to have an annual meeting of the new association.

The Belgian Congress of Surgery.—Fractures, appendicitis and surgical antisepsis and asepsis were the subjects discussed at this congress, which met at Brussels, September 8 to

10. Tuffier's address was a plea for operative intervention under radiography and asepsis for fractures of the long bones. Valraven's address on surgical antisepsis and asepsis was an interesting presentation of the practices in vogue at various clinics as learned by direct inquiry of the surgeons. About 25 different processes of sterilizing catgut were advocated by the 58 surgeons who expressed their preference for catgut; 50 who use it occasionally are satisfied with the manufacturer's disinfection. Jonnesco puts a flannel suit on the patient that extends closed beyond hands and feet; Reverdin uses a similar suit of cotton. Dry asepsis seems to be the rule where possible. Drainage is rejected completely by a large number; 74 use rubber drains; 27 Mikulicz's drains, and 13 glass tubes. Giordano and Berger apply a large dressing, extending far beyond the wound, while Roux prefers a minimal collodion dressing. Hannecart and Jacobs absolutely decline all infectious cases; Terrier, Korteweg, Bataille and Delagénière never touch a suppurating case nor even the dressings, always using the forceps. Schwartz and Mouchet take a general bath after operating on a suppurating case. Adenot emphasizes the advantage of copious sweating in the disinfection of the hands, and Letoux states that he dips his hands in ink and lets them dry as a test of the thoroughness of his disinfection afterward. The stain shows the parts overlooked in the cleansing, the particles of ink settling in the crevices like microbes. Out of 120 replies received, 54 surgeons state that they have given up the use of gloves, except perhaps rubber gloves during septic operations, but Von Eiselsberg, Tuffier and Gerster use lisle gloves for all operations and change them often. The mask is rejected by 95 surgeons, others advocating it. Rydygier and Bassini moisten face and mustache with an antiseptic solution before operating. Haegler always rinses his mouth with 50 per cent. alcohol. Some surgeons wear a waterproof apron under their blouse. Jacobs advises stripping to the skin and putting on a complete washable suit fresh from the autoclave before each important operation. Cordemans retains only his trousers under his blouse. Verhoef changes his linen before every important operation. The general trend of opinion seems to be to change the dressings as little as possible and then to handle them only with the forceps. Jonnesco has the dressings changed only in a special aseptic room, not in the ward, and a number of surgeons have a special room for preliminary disinfection. Sorel warns against the use of antiseptics which entail desquamation. Goris paints the region around the field with iodin the day before and the day of the operation. If the umbilicus is near the field, Van Stockum fills up the depression with collodion.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Sept. 4, 1902.

The President, Dr. John M. Fisher, in the Chair.

A case of endothelioma of the uterus was described by Dr. Linnæus H. Prince. This rare affection has been reported four times.

A Report of 100 Obstetrical Cases.

Dr. Edwin Rosenthal, in this paper, wished to show the average run of such cases in private practice. He placed peculiar emphasis on the nationality of the patient as being a factor in the character of labor. Of the 100 children 17 were lost. The majority of presentations were by the head; it was necessary to use the forceps 15 times. Of the instrumental deliveries 12 were males and 3 were females; thus, for every female child needing forceps delivery, 4 male children had to be so delivered. Regarding the use of forceps, a rule of the author, which he considers sufficiently elastic to suit most cases, is as follows: Any case suitable for the use of forceps should have them applied if after three hours no progress is made toward the delivery of the child. The author considered as suitable forceps cases those that can possibly be delivered with the aid of the instrument, such as occipital anterior position, right and left. The occipital posterior position, right or left, he believes always to be a debatable position, and the use of forceps should not be considered as the only method to pursue. Many of the latter positions are believed to be impossible forceps cases, and the question of podalic version or of section should always be considered. The speaker advocated the use of douches only when there is infection, and then for special purposes.

In conclusion, the necessity was emphasized of considering obstetrics as a surgical procedure, and therefore all the rules of hygiene and cleanliness should be the fundamental principle in its practice.

DISCUSSION.

Dr. John C. DaCosta—My experience with left occipital posterior position has been, that it has generally been easily converted into anterior, particularly if the forceps or one blade as a vectis is used. The most of my cases have been American women, and in these we know that the heads of the babies have been larger than those of foreigners.

I was glad to hear the Doctor speak of the disuse of douches. A long while ago I satisfied myself that douches, unless for some purulent or similar discharge, should not be used. My belief was confirmed by an article in a German paper, describing experiments in which streptococci had been implanted in vaginæ without sterilization. The streptococci were killed within an hour. The vaginæ were then sterilized and the streptococci again implanted, when it took 24 hours to kill them. This I thought was a strong argument against the douche.

I think the Doctor is rather free in the administration of ether in obstetric work. I would like to ask him what proportion of hemorrhage he has had in cases in which he has used ether. I have seen very serious results from its use. I think that Nature intended woman should have a certain amount of pain to help expulsion. We know that ether affects if it does not entirely relax the muscular tissue, and we do not want this to happen, nor to have hemorrhage.

Dr. M. M. Franklin—I wish to congratulate Dr. Rosenthal on his paper. I think the infant mortality mentioned is rather high, which is perhaps due to the foreign nationality of his patients. As an anesthetic I have never used anything but ether, and have never noticed any bad results. In some of my cases postpartum hemorrhages have occurred, but I think this would have happened no matter what anesthetic was used.

Every case of occipito-posterior presentation I have been able to deliver without section or craniotomy. Perhaps this has been due to good fortune rather than to skill, but I think with Dr. DeCosta that with patience and the use of forceps we can secure the anterior position, or deliver as a posterior presentation with, of course, more or less laceration of the maternal structures.

Dr. J. M. West—I do not altogether agree with the author concerning anesthetics. I am partial to the use of chloroform and use it almost invariably. If given carefully I believe it is the safest anesthetic we have in obstetric practice.

The question of posterior rotation of the occiput is extremely interesting, and one not always easy to settle in the best manner. I have never met with a case of rotation of the occiput posteriorly in which delivery could not be made safely by means of the forceps.

Dr. Rosenthal, in closing—In cases in which the promontory of the sacrum is a little too large, and the head is firmly fixed in the fourth position, a Cesarean section should be done. The use of the obstetric forceps in such cases should always be a debatable question. In the exceptional cases in which the uterus has been drained of its liquid contents and the head is in a posterior right or left position, I believe that if the child is alive a section is a right procedure, giving greater hope to both child and mother than a forcible instrumental delivery. But if the child be dead, then craniotomy is justifiable. If the instruments be applied in this position, and the pelvis be large enough or the head of the child small enough to be forced through, delivery can be accomplished; but at what a cost! Invariably the perineum is torn and other and greater harm may be inflicted. An anesthetic should be employed when we apply the instruments.

I know that hemorrhages sometimes follow ether, but there is some other cause than the ether. I think that postpartum hemorrhages are generally due to something left behind, though, of course, ether may sometimes produce them. I should make it a rule of practice in all cases of hemorrhages of this character to first look for the cause and then treat it. I believe we ought to use an anesthetic in all obstetric operations, but I most certainly believe it is wrong to increase our obstetrical practice by the employment of anesthetics.

SECOND INTERNATIONAL CONFERENCE FOR THE PREVENTION OF SYPHILIS AND VENEREAL DISEASES.

Held at Brussels, Belgium, Sept. 1 to 6, 1902.

(From Our Special European Correspondent.)

(Concluded from page 857.)

Arm-to-Arm Vaccination.

A spirited discussion took place regarding arm-to-arm vaccination, but it was generally conceded that animal lymph was advisable. If the state prohibited arm-to-arm vaccination, as a means of control of one of the smaller factors in the spread of syphilis, then the state should provide the necessary vaccine lymph.

Industrial Infections.

Dr. Landouzy, Paris, advocated the passage of legal measures which would recognize, as punishable, all cases of syphilis acquired by workers in industrial manufacture. The responsibility should fall on the proprietor, whose duty it should be to insist that none of his employes had the disease, or the state should have the power to inspect and enforce a healthy condition of employes when large numbers of workers are collected.

Discussion of Resolutions.

The afternoon session was devoted to the discussion of certain fixed resolutions. The greatest amount of spirit was shown in the discussion of two resolutions, one by Dr. Landouzy and the other by Dr. Neisser. The former advocated in general the abandonment of all restricted measures regarding the prostitute, and the enforcement of common laws which should settle the responsibility of communicating disease on the diseased individuals. This resolution met with the approval of a large number of the abolitionists, although it was very evident that no sound principles of modern law were in the minds of those in favoı of the measure.

Dr. Neisser's proposition met with greater favor. He said that the state had the right to protect its citizens and should establish a system of sanitary control, which was a transformation of the present systems. This should not be obligatory for all, but only in so far as hygienic purposes were concerned. The majority of the members of the Congress favored this, but no unanimous conclusion could be reached. Other questions and resolutions will be presented at the end of this report.

Legal Responsibility for Transmitting Venereal Diseases.

This subject was discussed with considerable vigor by eminent jurists on the fourth day. The opinions were very various, for, while in theory the objects to be obtained were admitted by all, it was shown by those of widest experience that all measures would prove absolutely impracticable, save for isolated and flagrant cases.

Mr. Bonnvie, of the Supreme Court of Brussels, gave a most interesting contribution to the discussion. He said that from a standpoint of jurisprudence the transmission of syphilis insantium and of syphilis were two entirely different things; the one being acquired by an innocent person through the dereliction of another, the other a matter of wilful exposure to a known or unknown danger. The law should frame measures to protect the former, but it could not recognize an immoral contract as in the case of the latter, save in the event of violence or theft. The law, if invoked, should be so, not because an individual by infecting another has done wrong to that individual, but because he has wronged society as represented by the tort suffered by one of its members.

From a practical point of view, however, when such cases are taken into the civil courts, all sorts of technical difficulties, questions for medical experts, etc., arise, and as a result the small hope of obtaining damages on the one hand and the dangers of blackmail on the other make the question extremely difficult excepting in the most flagrant instances. Prostitution is not recognized by law; it can not be, and those who pursue that avocation must know its dangers. Misery and crime are largely responsible for the evil of prostitution. Remove these and this evil will largely disappear. He quoted Fournier as saying that one-fifth of all women were infected by their husbands. How can this terrible condition be remedied? By divorce? But how will this right the wrong? It will not remove syphilis from the wife, and then comes the scandal-producing process of proving the husband guilty. The women should be given a better opportunity and divorce might prove, in the hands of the man, a destructive weapon. The man with syphilis who insists on marrying because of pecuniary or social advantages should be considered by the physician as outside the ordinary moral plane. He is a criminal and his secret should not be harbored.

The dangers of venereal disease should be taken into account in all contracts for marriage, as any other defaulting factor is recognized in business contracts.

Jurists LeFoyer and Bell of Paris maintained that an infecting individual should be punished by law. His fault is a tort committed on another and should be recognized in the legal code.

D. Jadassohn, Berne, said that new laws had recently been made in Switzerland which make it a misdemeanor for a prostitute to continue her calling after a physician has notified her she has an infectious disease.

Dr. Tomasoli, professor in the University of Palermo, said that the prostitute should be legally recognized because of her intimate association with the criminal. The state control of prostitution is a legal necessity as a protection to the community.

Individual Prophylaxis.

The factors concerned in individual prophylaxis are well recognized by all and hence the discussions on this point were not extended.

Dr. Good, Paris, spoke of talks and lectures as being unsatisfactory save in hospitals or garrisons where discipline was obtainable. Placards and signs were of limited use because of the difficulties of including instruction for both sexes. Wisely written pamphlets and books, carefully distributed, were the best means of giving knowledge which was at the basis of individual prophylaxis.

Dr. Queyrat asked for the assistance of the clergy to take off the ban of secrecy concerning the discussion of sexual questions. By their efforts a more healthy tone could be induced.

M. DeMorsier advocated more biologic teaching in elementary schools, whereby the phenomena of sex will be approached rationally and impersonally and the youth will have learned from plants and lower animals the principles of reproduction.

Dr. Santoliquido urged the principle of gratuitous medical treatment as important for individual prophylaxis. In the Italian dispensaries the names of the patients are not asked and the bottles are labeled so that no suspicion will be directed to the sick person. The government spends about $200,000 a year to provide instruction in elementary sexual hygiene.

Dr. Neisser believed in the open dispensary, but thought that it should be for those only who could not afford to pay.

Other members voiced similar and other well-recognized features concerning the intellectual and moral instruction of the youth of the country.

Statistics.

Because of the technical character of the subject, this subject was but scantily noticed, being referred by Dr. Neisser to a committee. Uniformity and regularity were the attributes most desirable in order to afford comparable figures.

Recommendations of the Congress.

A number of important resolutions were not recommended to the Congress because of lack of unanimous vote, but a few minor points were presented as the vote of all. In brief, these were:

1. All recruits should be carefully instructed by an official pamphlet on the risks, dangers, etc., of venereal diseases. This pamphlet he must keep as a part of his official papers.

2. The law should guarantee free treatment to all venereal patients and should break down all restriction against the treatment of these diseases in public hospitals. Medical secrecy and modesty should be respected.

3. Moral influences should be furthered and it should be taught that chastity and continence are not only compatible with perfect health, but are highly desirable.

4. Statistical inquiries should have a uniform basis, should be international in character and should receive government supervision.

5. All institutions for the instruction of the young should introduce courses in the relative matters of sexual hygiene from a moral and broad point of view and there should be editorial conformity in the books and pamphlets which are issued for this purpose.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-Second Annual Meeting, held at Allentown, Sept. 16 to 18, 1902.

The President, Dr. F. P. Ball, Lock Haven, in the Chair.

(Concluded from page 858.)

Hydrotherapy in Diseases of the Heart.

Dr. Solomon Solis Cohen, Philadelphia, spoke on the relief and the cure of some cases of disease of the heart by means of application of water and of the variations of temperature that can be produced by these applications and which could be carried out by any physician in his own household. It was not necessary to send patients across the water to a particular spa, or to buy elaborate apparatus. A few feet of rubber tubing, a rubber bag, a bathtub or spigot or hose were all the apparatus necessary. With these means it was possible to diminish or retard the rate of the cardiac contractions, increase or diminish the vigor of the cardiac action. The majority of physicians were not aware that the application of Leiter's coil over the heart or the application of the ice pack is the best preventative possible of the cardiac weakness of infectious disease. Even when cardiac weakness has developed the application of cold over the pericardium is less dangerous than large doses of alcohol.

Dr. Cohen, in closing the discussion: Although it seemed rather paradoxical to speak of the internal use of water to relieve dropsy, yet in certain cases it would be found that by restricting the time of water drinking and allowing the patient to satisfy himself at intervals of four hours there would be a decided effect in increasing the urine and diminishing anasarca. The patient is allowed no fluid of any kind in the interval. The use of hypodermoclysis given very slowly will sometimes start the kidney sufficiently to carry off the anasarca. If a large quantity is introduced rapidly under the skin the result is immediate edema of the lungs and death of patient.

The Unity and Intercommunicability of Human and Bovine Tuberculosis.

Dr. Mazyck P. Ravenel, Philadelphia, showed the proof of the unity of human and bovine tuberculosis. 1. In the study of pure cultures from man and bovine animals. While certain differences may be ordinarily recognized they are due to the soil in which they have grown, and the resistance they have encountered. Cultures on artificial media lose their distinctive features gradually, and become so much alike that it is difficult to tell them apart. 2. In the action on animals, cultures from both sources produce essentially the same disease in all experimental animals. The chief difference noted is that cultures from bovine sources have a much greater pathogenic power. 3. The gross pathology of the lesions produced is essentially the same, such differences as are seen being due to the resistance of the animal rather than to any difference in the cultures. 4. The pathologic histology of the lesions is the same as shown by Schuppel, Baumgarten and others. Though this proof of unity presupposes intercommunicability the following further proofs are submitted: 1. Infection from man to animals. (*a*) By sputum from attendants, as in the cases reported by Cozette, Cliquet, Huon, etc. (*b*) By inoculation, as shown by Chauveau, Klebs, Crookshank, and others. 2. Infection from animals to man. (*a*) By inoculation, as in many reported cases. (*b*) By food, cases of which have also been reported. The author states that the two diseases are the same, caused by the same germ and are intercommunicable. Tuberculosis of cattle is therefore a menace to public health and every effort should be made to suppress and eradicate it. At the same time the greatest danger is in tubercular sputum from man. The efforts for the prevention of tuberculosis should embrace all sources of infection.

Food Adulteration.

On Wednesday evening Secretary Hamilton of the Department of Agriculture at Harrisburg delivered an address on "Food Adulteration; Its Extent and Control." The condition of food products on the markets in the state were shown by figures giving facts as disclosed by the work of the Dairy and Food Division of the Department of Agriculture for two and a half years. Of 3023 samples of butter, all were sold as butter except 103 sold as oleomargarine, and 61 sold as butterine. The analyses show that 1019 were butter, 164 renovated butter, and 1840 oleomargarine. An elaborate table is given showing samples of food analyzed under the provisions of the Pure Food Act of June 26, 1895. The responsibility for food adulteration is fixed on the manufacturer, the jobber, the retailer and the cook, and under the latter head is included the proprietor employing the cook. The careless methods used in the keeping of food are criticized. The keeping of milk in open vessels exposed to germs is common. It is suggested that if each physician in Pennsylvania would urge greater care in the preparation and preservation of food in the families of his patients the number of many troubles would be reduced and the length of life, its enjoyment and the efficiency of workers would be largely increased. The laws governing food adulteration as it affects the manufacturer, etc., should be both state and national. Heretofore this legislation has been confined to the several states, but the opinion is unanimous that a national pure food law is a necessity. The purposes of such a national law are given by the author and the statement is made that a law embodying these points has been prepared, and has the endorsement of the National Association of Dairy and Food Commissioners to be presented before Congress at its next meeting. The opinion is expressed that the movement should be given the active support of all the medical associations in the United States, and that the members of these associations should urge on their members of Congress the importance of its speedy passage. The suggestion is made that the society appoint a committee of its most experienced members to take up the matter of the effects of the various substances now employed for the preservation and adulteration of foods and report their conclusions at the meeting in 1903.

Infant Feeding.

Dr. Adelaide M. Underwood stated that if the mother were normal, in body and mind, the infant's food should be the mother's milk. Indigestion in mother or babe should be treated by hygienic means rather than by medicine. Since food is not alone alimentary all details of healthful environment should receive minute attention. The average factory-prepared food is not to be considered by intelligent, scientific physicians. A reliable dairy must be recommended. The artificially-fed baby should in no case be left without the mother being taught the careful weighings, the study of the bowel dejections, and that deviations in these to be promptly reported. The baths of the baby, the clothing, and time to be spent in the open air are given consideration.

Address in Surgery.

Dr. George D. Nutt, Williamsport, called attention to the growing interest and importance in surgical work and stated that too much is written for self-laudation rather than for scientific value. Instead of surgery having reached the acme of its power, the author believes it just on the threshhold with a future bright with large possibilities.

Uniform Constitution for County Societies.

The constitution and by-laws proposed by the special committee were adopted as a standard or model for county societies and are to be referred to the local societies for adoption.

The president appointed a committee of five to consider the question of food adulteration; the use and abuse of the so-called preservatives and the coloring of food, and the effect of these adulterations on the health of the people. This committee is to investigate and report at the next annual meeting, and the officers of the Department of Agriculture of the State of Pennsylvania will be asked to co-operate.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Pertussis.

Monti, according to an abstract in *Amer. Med.*, recommends the following in the treatment of whooping cough: 1. Place the child in a well-lighted and well-ventilated room, the temperature of which should be kept down to 68 F. The removal of the small patients to a temperate climate during the winter is excellent. Avoid variations in winter. 2. Inhalations of boric acid and sodium salicylate.

The following are recommended by Birchfield:

R.	Acidi carbol.	gtt. xxx	2	
	Menthol (pure)	gr. xv	1	
	Aq. destil.	℥vi	180	

M. Sig.: Six drams should be inhaled daily by means of an inhaler.

The internal treatment is as follows:

R.	Pulv. belladonnæ	gr. iss		09
	Sodii bicarb.			
	Sacchari albi, āā	gr. xxii	1	50

M. Sig.: To be taken one to three times daily in a capsule.

[The dose of belladonna in the foregoing prescription is rather large.]

The following combination containing bromoform is recommended by Marfan:

R.	Bromoformi	gtt. xlvii	3	00
	Olei amygdalæ dulcis	ʒiv	16	

This is to be shaken thoroughly and added to:

	Acaciæ	ʒiv	16	
	Aq. laurocerasi	ʒi	4	
	Aq. destil.	℥iv	120	

M. Sig.: One teaspoonful three or four times daily.

Quinin is also recommended internally as follows:

℞.	Quininæ tannatis			
	Sodii bicarb.			
	Sacchari albi, āā	gr. xv	1	

M. Ft. Chartulæ No. vi. Sig.: One every two hours.

Rectal Gonorrhea.

In an article in the *Cin. Lancet-Clinic*, the treatment of gonorrhea of the rectum is carried out in very much the same way as gonorrhea of the penis or vagina. In the first place calomel is recommended in order to reduce the inflammation and to relieve the congestion in the hemorrhoidal veins. The following is recommended as an antiseptic in the form of an enema:

R.	Sol. acidi boracici (sat.)	℥i	30	
	Aquæ	Oi	480	

M. Sig.: Use as a rectal injection.

When this solution is expelled the following is introduced:

℞.	Nargol	gr. x		65
	Aq. destil.	℥i	30	

M. Sig.: To be injected twice daily.

The author recommends that the anus be bathed morning and evening with hydrogen peroxid, followed by a solution of hydrastis canadensis, one teaspoonful to half a pint of water. The following ointment is then applied on lint:

R.	Hydrarg. chloridi mitis	ʒi	4	
	Ichthyol	ʒi	4	
	Lanolini	℥i	30	

M. Sig.: Apply externally on lint and fasten with a bandage.

It takes, according to the author, from three to ten weeks to effect a cure by this treatment.

The patients should be placed on tonic treatment, such as syrup of hypophosphites, combined with tincture of gentian, cinchona, nux vomica and taraxacum.

Use of Salicylates in Children.

The following formulæ from Gillet are quoted by *Med. Standard*, in prescribing salicylates for children:

℞.	Sodii salicylatis	gr. viiss		50
	Syr. aurantii flor.			
	Aq. destil., āā	℥i	30	

M. Sig.: One teaspoonful every hour in a little milk.

The amount of sodium salicylate in the foregoing prescription can be varied according to the age. When a mixture can not be administered, suppositories may be used:

R.	Sodii salicylatis	gr. viiss		50
	Olei theobromæ	ʒi	4	

M. Ft. suppos. No. iv. Sig.: To be used at equal intervals in the twenty-four hours.

Another formula may be used as a local application to the joints:

℞.	Methyl salicylatis	gr. xv	1	
	Menthol	gr. iii		20
	Petrolati	℥i	30	

M. Sig.: Apply locally around the joints, the whole being covered with cotton wool and waxed taffeta; or:

℞.	Acidi salicylici	ʒiiss	10	
	Spts. terebenthinæ	ʒiiss	10	
	Lanolini	ʒiii	12	
	Adipis	℥iiss	75	

M. Sig.: To be applied locally to the affected joints.

Treatment of Premature Baldness.

Lassar, in the *Indian Med. Record*, states that he has observed from experiments on animals that this disease is contagious, and occurs independent of any general affection or state of health of the patient. He recommends the following method of treatment: The scalp is to be washed every day with tar soap or soft glycerin soap or with soap containing sodium iodid, the soap is to be thoroughly applied and rubbed into the scalp for fifteen minutes. Following this a warm douche is used; then after the application of a corrosive sublimate solution—1 to 500—the hair is dried and 0.5 per cent. of a spirit solution of naphthalin is rubbed into the affected parts. Carbolic acid or salicylic acid may also be employed. If this treatment be adopted in the early stages, when the hair is just beginning to fall, it usually proves successful, but it must be kept up for eight weeks or more. The fact that this disease is due to a communicable morbid principle suggests that it may be conveyed by the comb and brush of the barber.

La Grippe.

The pulmonary forms of la grippe sometimes become very stubborn to treatment. The following is recommended by *La Med. Moderne:*

℞.	Pulv. terpin	gr. iv		25
	Sodii benzoatis			
	Benzonaphthol, āā	gr. iii		20
	Sparteinæ sulph	gr. ss		03
	Quininæ hydrochlor.	gr. iiss		15

M. Ft. Cachet No. i. Sig.: One such cachet to be taken four times daily; or:

℞.	Pulv. terpin	gr. iv		25
	Sodii benzoatis	gr. iii		20
	Potassii iodidi	gr. iss		09
	Benzonaphthol	gr. iii		20
	Quin. hydrochlor.	gr. iiss		15
	Pulv. nucis vom.	gr. ¼		015
	Sparteinæ sulph.	gr. ss		03
	Ergotin	gtt. v		30

M. Ft. Cachet No. i. Sig.: One such four times daily.

The following is recommended to control the cough:

℞.	Pot. bromidi	gr. iii		20
	Codeinæ	gr. 1/6		01
	Antipyrini	gr. ivss		25
	Morph. hydrochlor.	gr. ⅛		0075

M. Ft. capsula No. i. Sig.: One such to be taken two or three times a day.

To ameliorate the catarrh symptoms the following combination is also recommended:

℞.	Pulv. ext. belladonnæ	gr. iv		25
	Codeinæ	gr. iv		25
	Pulv. capsici	gr. iv		25
	Euquininæ	ʒi	4	
	Acetanilidi	ʒi	4	

M. Ft. chart. No. xx. Sig.: One powder every three or four hours; or:

℞.	Quininæ salicylatis	gr. xxxvi	2	35
	Acetanilidi	gr. xxiv	1	65
	Pulv. camphoræ	gr. iv		25
	Pulv. capsici	gr. ii		12
	Pulv. ext. belladonnæ	gr. ii		12

M. Ft. capsulæ No. xii. Sig.: One every three hours if necessary.

Eggs in Therapeutics.

L. Normand, as noted by the *N. Y. Med. Jour.*, gives the following formulæ in which eggs may be used therapeutically: The most common preparation known as "chicken's milk" is made as follows:

℞.	Yolk of one egg.		
	Hot water	℥vi	180
	Sugar	ʒv	20

M. and flavor with two teaspoonfuls of orange flower water.

RESTORATIVE PREPARATIONS.

℞.	Cream	℥vi	180
	Yolk of two eggs.		
	Sugar	ʒvii	28
	Aquæ cinnamoni	ʒxi	44

Misce.

Guibort's formula for "syrup of eggs" is as follows:

℞.	Eggs	x	
	Aquæ	ʒx	40

Beat up and mix with:

Sodii chloridium	℥ss	15
Aq. aurantii flor.	ʒvi	24
Sacchari	℥ix	270

A RESTORATIVE TEA.

℞.	Yolks of three eggs.		
	Cloves	ʒxiv	56
	Sugar	gr. xxx	2
	Water	ʒviii	32
	Brandy	℥xxiii	690

M. Sig.: Serve as a drink.

Medicolegal.

SOME LEGISLATION OF THE YEAR 1902.

United States—Public Health Service.—Chapter 1370 of the Public Acts of the Fifty-seventh Congress, which provides that the United States Marine-Hospital Service shall hereafter be designated the Public Health and Marine-Hospital Service of the United States, provides, among other things, that there shall be an advisory board for the hygienic laboratory provided by the Act of Congress approved March 3, 1901, for consultation with the surgeon-general of the Public Health and Marine-Hospital Service relative to the investigations to be inaugurated, and the methods of conducting the same, in said laboratory. That there shall be appointed by the surgeon-general, with the approval of the Secretary of the Treasury, whenever, in the opinion of the surgeon-general, commissioned medical officers of the Public Health and Marine-Hospital Service are not available for this duty by detail, competent persons to take charge of the divisions, respectively, of chemistry, zoology and pharmacology of the hygienic laboratory. Provided, that all commissioned officers of the Public Health and Marine-Hospital Service not below the grade of passed assistant-surgeon shall be eligible to assignment to duty in charge of the said divisions of the hygienic laboratory, and while serving in such capacity shall be entitled to the pay and emoluments of their rank. That when, in the opinion of the surgeon-general, the interests of the public health would be promoted by a conference of said service with state or territorial boards of health, quarantine authorities, or state health officers, the District of Columbia included, he may invite as many of said health and quarantine authorities as he deems necessary or proper to send delegates, not more than one from each State or Territory and District of Columbia, to said conference: Provided, that an annual conference of the health authorities of all the states and territories and the District of Columbia shall be called, each of said states, territories and the District of Columbia to be entitled to one delegate: And provided further, that it shall be the duty of the surgeon-general to call a conference on the application of not less than five state or territorial boards of health quarantine authorities, or state health officers, each of said states and territories joining in such request to be represented by one delegate. That to secure uniformity in the registration of mortality, morbidity, and vital statistics it shall be the duty of the surgeon-general, after the annual conference required as above to be called, to prepare and distribute suitable and necessary forms for the collection and compilation of such statistics, and said statistics, when transmitted to the Public Health and Marine-Hospital Bureau on said forms, shall be compiled and published by the Public Health and Marine-Hospital Service as a part of the health reports published by said service. That the President shall from time to time prescribe rules for the conduct of the Public Health and Marine-Hospital Service. He shall also prescribe regulations respecting its internal administration and discipline, and the uniforms of its officers and employes.

New York—For Furtherance of Investigations.—In Chapter 594 of the Laws of New York of 1902, making appropriations for various purposes, there is appropriated to the department of health for necessary expenditures for the manufacture and standardization of tetanus, streptococcus and diphtheria antitoxin and for further investigations of serumtherapy in tuberculosis, typhoid fever and kindred diseases, the sum of $14,000 or so much thereof as may be necessary, such expenditure to be made on the approval of the governor, and available, October 1, 1902, for the ensuing fiscal year. For the department of health for equipment and maintenance of the cancer laboratory at Buffalo, for investigation into the cause, nature, mortality rate and treatment of the cancer, and the salaries of officials of the same, $15,000. The moneys herein appropriated to be paid from vouchers officially verified by the director of said laboratory, and approved by the state commissioner of health.

Virginia—Prohibition on Infected Persons.—Chapter 421 of the Laws of Virginia of 1902 provides, under penalty, that it shall be unlawful for any person who knows himself to be infected with any dangerous, contagious, or infectious disease, or who has recently had such disease, and has not cleansed his person and clothes so as to be free from the infection: First, to go into the company of any one who is liable to take the infection without warning such person of his being so infected. Second, to go into any church or other house used for public worship or for school purposes, or to go into any mine, mill, factory, shop, store, warehouse, depot, train, ship, hotel, restaurant or dwelling belonging to any other person, or to go into any courthouse, jail, asylum or almshouse, or to go into any like house, place or building. Third, that it shall be unlawful for any person who has been voluntarily exposed to smallpox or any other dangerous, contagious, or infectious disease to come into this state, or to go from place to place therein, within a period of fifteen days from such exposure, unless such person shall have a certificate from a competent and reputable practicing physician stating that no danger of communication of disease by such exposed person exists. When the State Board of Health or the county or city boards of health have established quarantine lines or ordered compulsory vaccination in any infected boundary, it shall be unlawful for any person to violate either of said regulations, or to aid or encourage another to violate either. But this act shall not apply to practicing physicians or undertakers when in the discharge of the duties of their respective professions or callings.

District of Columbia—To Promote Anatomic Science.—Chapter 638 of the Public Acts of the *Fifty-seventh Congress* creates what is to be known as the Anatomical Board of the District of Columbia. It is to consist of the health officer of the District and two representatives from each of the schools in the district conferring the degree of doctor of medicine or doctor of dental surgery; the Post-Graduate School of Medicine, and the medical schools of the United States Army and Navy. Every public officer, agent and servant, and every officer, agent and servant of any almshouse, prison, jail, asylum, morgue, hospital and other public institutions and offices having charge or control of dead human bodies requiring to be buried at public expense, shall notify the board, or such person as may be designated by it, whenever any dead human body comes into his possession, charge or control for burial at public expense. And every such officer shall, on application by the board or its agent, without fee or reward, and complying with the laws and regulations governing the removal of dead human bodies in the District of Columbia, deliver every such body to said board. Exceptions to this are where the deceased person, during his last illness, without suggestion or solicitation, requests to be buried or cremated, or relatives within a limited time claim the body or ask that it be buried, or a friend provides for its proper burial or cremation, or the deceased was a traveler who died suddenly. The bodies so received by it the board is to distribute among and to the above schools; the medical examining boards of the United States Army, Navy, and Marine-Hospital Service; and the Board of Medical Supervisors of the District of Columbia, on written request therefor, each such school and board to receive annually, as nearly as may be practicable, such proportion of the entire number of bodies distributed as the number of students enrolled and in regular attendance at such school, and the number of candidates appearing for examination before such board, respectively, engaged bona fide at such school, or examined by said school, or examined by said board in dissecting, and operative surgery on the cadaver, bears to the total number of students so enrolled in attendance, and engaged, and of persons so examined, in the District of Columbia. The schools, except those of the Army and Navy, must each give a bond in the penal sum of $200, conditioned that all bodies which it shall receive shall be used in the district and only for the promotion of the science and art of medicine and of dentistry.

District of Columbia—Reporting of Typhoid Fever.—Chapter 7 of the Public Acts of the Fifty-seventh Congress provides that every physician attending or called in to visit or examine any case of typhoid fever in the District of Columbia shall at once send to the health officer of said District a certificate, in ink, signed by him, stating the name of the disease, and the name, age, sex and color of the person suffering therefrom, and setting forth by street and number or otherwise sufficiently designating the house, room or other place in which said person can be found, together with such other reasonable information relating thereto as may be required by said health officer; and on the recovery or death of such patient the physician in attendance shall, within twenty-four hours after he becomes aware of such recovery or death, forward to said health officer a similar certificate certifying thereto.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record (N. Y.), September 27.

1 *Rational or Dietetic Treatment of "Bright's Disease" Contrasted with Surgical Intervention. William H. Porter.
2 *Tuberculosis of the Urinary Tract. P. Newmark.
3 Is It Wise for the Regular Practicing Physician to Spend Time to Investigate Psychic Therapeutics? R. Osgood Mason.
4 *Clinical Study of a New Silver Salt in the Treatment of Gonorrhea. H. M. Christian.
5 Pulse and Respiration at an Elevation of 10,200 Feet, as Ascertained by the Examination of 100 Subjects. Maurice Kahn.

Medical News (N. Y.), September 27.

6 *Myomectomy vs. Hysterectomy. Andrew McCosh.
7 *The Relative Advantages of the Complete and Partial Hysterectomy. E. E. Montgomery.
8 Wounds, with a Discussion of What Constitutes Rational Treatment. Frederic Griffith.
9 *The Importance of Diagnosis in Skin Diseases Considered Generally and as Applied to Particular Diseases. Isadore Dyer.
10 Advances in Ophthalmic Therapeutics. D. B. St. John Roosa.
11 *Bronchial Asthma and Allied Disorders; Their Summer Treatment. Beverley Robinson.
12 School Life and Insanity. J. S. Lankford.

Boston Medical and Surgical Journal, September 25.

13 *The Creation of an Artificial Valvular Fistula: (*a*) for the Treatment of Chronic Colitis; (*b*) As an Adjuvant to Certain Operations on the Stomach. C. L. Gibson.
14 *The Iliopsoas Bursa: Its Surgical Importance and the Treatment of Its Inflammatory Conditions, with Report of Three Cases. F. B. Lund.
15 *Operative Treatment of Varicose Veins. J. B. Blake.
16 *The Local Pathology of Acute General Infections Arising Through the Lymphoid Tissue of the Fauces. J. L. Goodale.

American Medicine (Philadelphia), September 27.

17 *Some Observations in Regard to Smallpox. Frederick H. Dillingham.
18 *[illegible] Man by Intermediate Members [illegible] f Bacilli. Warren Coleman.
19 [illegible] urgery. Charles P. Noble.
20 *[illegible] isease. John C. Spencer.
21 [illegible] of the Symphysis Pubis, Following Normal Labor, Treated by Resection and Wiring. B. R. Schenck.
22 *School Vaccinations. William R. Fisher.
23 The Hospitals of Jerusalem. Nicholas Senn.
24 Medical Education. Charles W. Richardson.

Philadelphia Medical Journal, September 27.

25 *Chauvinism in Medicine. William Osler.
26 *An Additional Case of Tumor of the Brain, Localized Clinically and by the Roentgen Rays. Charles K. Mills; Roentgen Ray Investigation. G. E. Pfahler; Operation. J. B. Deaver.
27 Leucocytosis in Lead-Workers. L. Napoleon Boston.
28 On the Dosage in Radiotherapy. George G. Hopkins.

New York Medical Journal, September 27.

29 *Perforating Ulcers of the Duodenum. (Concluded.) John B. Murphy.
30 *Placenta Previa; Its Early Recognition and Treatment. Edward A. Ayers.
31 Complications in the Passage of a Gallstone. (To be concluded.) Neil Macphatter.
32 Pain as a Symptom in Gynecologic Disease. Samuel M. Brickner.
33 The Treatment of Yellow Fever. J. Hobart Egbert.

St. Louis Medical Review, September 27.

34 Sarcoma of Testicle and Kidney with Presentation of Specimen of the Former. Henry Jacobson.
35 A New Electric Centrifuge. Joseph L. Boehm.

Cincinnati Lancet-Clinic, September 27.

36 *The Obstetrical Aspects of Idiocy. William Gillespie.
37 *Indications for the Use of the Stomach-Tube. Henry W. Bettmann.
38 An Easy Perineorrhaphy. W. V. Watson.

American Practitioner and News (Louisville), August 15.

39 Medical Treatment of Cholel[illegible] Bate.
40 *Surgical Treatment of Chole[illegible]
41 The Medical Management of [illegible] n.
42 *Treatment of Fractures and Dislocations in Relation to Suits for Malpractice. John A. Lewis.
43 Nasal Obstructions. Dudley S. Reynolds.

Medical Fortnightly (St. Louis), September 10.

44 Focal Facial Epilepsy, Followed by Temporary Unilateral Paralysis of the Face and Tongue. Frank R. Fry.
45 Hemorrhage After Tonsillotomy. H. A. Leipziger.
46 The Hygiene of Pregnancy. Charles E. Paddock.
47 Smallpox; Its Differential Diagnosis. J. C. Sullivan.
48 The Great Social Evil; Abortion and Sterility. Wm. V. Loftus.

Northwestern Lancet (Minneapolis), September 15.

49 *A Safe Milk-Supply. H. M. Bracken.
50 *Intestinal Obstruction, with Report of a Case. J. W. Andrews.

Virginia Medical Semi-Monthly (Richmond), September 12.

51 *Wholesale poisoning from the Ptomaine of Milk. T. M. Baird.
52 *Absence of Appendix Vermiformis in Two Cases. Jacob Michaux.

Therapeutic Gazette (Detroit, Mich.), September 15.

53 *Two Cases of Nephrectomy for Sarcoma of the Kidney in Children, with Operative Recoveries. Robert C. LeConte.
54 Two Cases of Fistula in Ano. Joseph M. Mathews.
55 The Diagnosis and Palliative Treatment of Reducible and Strangulated Hernia. Thomas H. Manley.
56 *Concerning a New Series of Synthetic Salts: The Nucleids of Iron, Copper, Mercury and Silver. E. R. Larned.
57 *Puerperal Eclam[illegible]
58 Ichthyol in Rheumatism. George S. Post.

Medical Sentinel (Portland, Ore.), August.

59 President's Address, Washington State Medical Society. J. W. Bean.
60 The Diagnosis and Treatment of Valvular Heart Disease. C. Quevli.
61 Cysts of the Kidney. Kenneth A. J. MacKenzie.
62 An Extra-uterine Pregnancy Retained Ten Years. J. B. Eagleson.

63 Method and Accuracy in Surgical Technic. R. C. Coffey.
64 Disinfection of Dwellings After Contagious Diseases. George W. Libby.
65 The Melancholic Man. Henry W. Coe.

International Medical Magazine (N. Y.), September.

66 *The Importance of Urinary Analysis in Phthisis. S. Edwin Solly.
67 *Electricity in Chronic Bright's Disease. A. D. Rockwell.
68 *Uremic Paralyses. D. J. McCarthy.
69 *The Customary Therapy of Kidney Diseases. Carl von Noorden.
70 The Significance of Intraocular Lesions Associated with Albuminuria. Walter L. Pyle.
71 Medicolegal Aspect of Chronic Alcoholism and Dipsomania. F. Savary Pearce.
72 The Management of Labor Complicated by Large-Sized Cysts of the Uterine Appendages. L. J. Hammond.

Medical Examiner and Practitioner (N. Y.), September.

73 The Early Diagnosis and Early Treatment of Cutaneous Cancer; Epithelioma. Charles W. Allen.
74 Course of the Ureters. Byron Robinson.
75 Female Risks. E. Holovtchiner.
76 An Endeavor to Estimate the Value of Certain Doubtful Lives for Life Assurance. F. LeM. Grasset.

Cleveland Medical Journal, September.

77 *Animal Tuberculosis. D. N. Kinsman.
78 *Some Observations on Appendicitis Based on 372 Operations. George W. Crile.
79 Case of Subdiaphragmatic Abscess of Splenic Origin. Charles S. Hamilton.
80 *Observations on Typhoid Fever. L. G. Leland.
81 On the Diagnosis of the Renal Function and Its Relation to the Surgery of the Kidneys. William E. Lower.

St. Louis Courier of Medicine, September.

82 Robert Willan and Dermatology. W. A. Hardaway.
83 Conditions I Have Found in Operating for the Radical Cure of Oblique Inguinal Hernia. Francis Reder.
84 Report of Two Interesting Cases of Brain Injury. F. B. Shields.
85 Aneurysm of the Transverse Aorta and Innominate Artery. William T. Coughlin.
86 Medical Examinations in Our Public Schools. E. A. Donelan.

Peoria Medical Journal, September.

87 Pharyngo-mycosis. L. R. Ryan.
88 Surgical Treatment of Retro-displacement of the Uterus. F. B. Dorsey.
89 Chronic Urethritis, Stricture of Large Caliber. Rolland L. Green.

St. Paul Medical Journal, September.

90 The Character and Tendency of Our Current Medical Literature; Notes on Its Development, Progress and Influence. Franklin Staples.
91 Dilatation of the Stomach. Christopher Graham.
92 *The Fallacy of Drainage in Diffuse Septic Peritonitis. Donald B. Pritchard.
93 *The Blood in Relation to Anesthesia—Especially Chloroform and Ether. Carl J. Holman.
94 Organization of the Medical Profession. Arthur Sweeney.
95 How Can the Public Best Be Educated as to the Importance of Preventive Medicine? H. M. Bracken.
96 The Stomach Tube in Practice. A. E. Hedback.
97 Some of the Etiologic Factors in Epilepsy. W. A. Jones.
98 Fractures and Dislocations of the Nose and Their Treatment. J. W. Robertson.
99 Sarcoma of Unusual Size. W. H. Magie.
100 Crile's Instrument for the Temporary Closure of the Carotid Arteries.

Carolina Medical Journal (Charlotte, N. C.), August.

101 Some of the Recent Remedial Measures. W. W. McKenzie.
102 Creosote. J. B. Wright.
103 Uric Acid Excess. D. J. Hill.
104 So-Called Dyspepsia. Charles A. Julian.
105 *Ergoapiol (Smith) in Diseases of the Female. Charles H. Shepard.
106 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.

Providence Medical Journal, September.

107 Pulmonary Embolism. George S. Mathews.
108 Pus in the Urine. Herbert Terry.
109 The Trade and the Profession. Hermon C. Bumpus.
110 The Treatment of Typhoid Perforations. Henry B. Potter.

Occidental Medical Times (San Francisco), September.

111 *Annual Report of the President of the San Francisco Board of Health for the Year Ending June 30, 1902.
112 Address Delivered Before Students of the University of California at the Opening of the Session of 1902. Harry M. Sherman.
113 From Ether to the Physiologic Unit. George Adam.
114 *Gonococcal Peritonitis. J. Henry Barbat.

Canadian Practitioner and Review (Toronto), September.

115 Ventro-fixation, Its Value and Results. J. Algernon Temple.
116 Strictures of the Esophagus. A. B. Welford.
117 Cirrhosis of the Liver in the Young. J. T. Fotheringham.
118 The Diagnosis of Stone in the Bladder. A. Groves.

Ophthalmic Record (Chicago), August.

119 *The Prognosis of Myopia. Francis Valk.
120 A Case of Hydrophthalmus. Gilbert D. Murray.
121 A New Self-Illuminating Ophthalmoscope. G. F. Suker.

Medical Summary (Philadelphia), September.

122 Chronic Diseases. J. L. Wolfe.
123 Neurasthenia. S. A. Buchanan.
124 Milk. J. M. Jones.
125 A Bad Case of Constipation. Ben H. Brodnax.
126 Typhoid Fever. M. G. Price.
127 The Therapeutic Use of Hydriodic Acid. Louis J. Pons.
128 The Dreamer in Medicine. J. M. Lynch.
129 Therapeutic Value of X-Rays. Thomas C. Leitch.
130 The Mosquito. Silas Hubbard.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), June.

131 The Passing of the Historic McDowell Building at Danville, Ky. William L. Lowder.
132 *In [illegible] at May We Expect from Treatment of [illegible]? Walter R. Parker.
133 *Pr [illegible] on the Administration of Ether and [illegible] B. Whinery.

New Yorker Medicinische Monatsschrift, August.

134 Zur Casuistik des Empyems der Stirn- und Siebbeinhohle und dessen Complication seitens des Auges. Max Toeplitz.
135 Zur Behandlung der Dysenterie. A. Herzfeld.
136 Ueber kunstliche Sauglingsernahrung. Johann Landau.

Denver Medical Times, September.

137 President's Address, Colorado State Medical Society. R. W. Corwin.
138 Uncertain Therapeutics. J. M. Blaine.
139 On the Trail of a Pain. Edward C. Hill.
140 Syphilis of the Nervous System. Millard P. Sexton.
141 The Treatment of Dropsy of Cardiac Disease. S. C. Reisman.

Medical Review of Reviews (N. Y.), August 25.

142 *The Value of the Roentgen Rays in the Treatment of Carcinoma. Carl Beck.

Memphis Medical Monthly, September.

143 Serum Therapy in Laryngeal Diphtheria. Adolph O. Pfingst.
144 The Prevention of Tuberculosis. Robert W. Tate.
145 A Modern Hospital. G. G. Buford.
146 Cancer of the Larynx Operated on Successfully by the Endolaryngeal Route. A. Bonain.
147 Acute Entero-colitis. A. C. Norman.

Journal of Medicine and Science (Portland, Me.), September.

148 A Few Facts Concerning Our Present Practical Knowledge of Certain Common Infectious Diseases—Notes on Modern Advancement. Franklin Staples.
149 A Case of Bothriocephalus Latus. C. E. D. Lord.
151 Criticisms on Christian Science. E. H. Judkins.

Western Medical Review (Lincoln, Neb.), September 15.

151 The Passing of Materia Medica and Therapeutics. I. C. Philbrick.
152 Progress in Therapeutics in the Diseases of Children. Georgiana Grothan.
153 Atypical Cases of Ectopic Gestation. Charles C. Allison.
154 Ulcer of the Cornea in Smallpox. D. C. Bryant.
155 *Etiology and Treatment of Migraine. J. M. Aikin.
156 Cerebral Thrombosis. F. E. Coulter.
157 Care in Vaccination. S. R. Towne.
158 Acute Suffocative Pulmonary Edema. LeRoy Crummer.

American Medical Compend (Toledo, Ohio), September.

159 Small Foreign Bodies in the Cornea; Their Results and Treatment. George F. Suker.
160 Infant Feeding. Wm. A. Dickey.
161 The Use of Adrenalin Chlorid in Typhoid Fever. Edwin A. Murbach and J. U. Foster.
162 Why Patients Sometimes Get Worse. David O. Hungerford.
163 *Ergoapiol (Smith) in Diseases of the Female. Charles H. Shepard.

Medical Bulletin (Philadelphia), September.

164 Sycosis—Rupia—Hyperidrosis. John V. Shoemaker.
165 The Treatment of Kidney Disease. George W. Pfromm.
166 Apoplectiform Neuritis—Paroxysmal Meralgia—Hysterical Hemiplegia and Hysterical Breast—Hysterical Apoplexy. Dr. Raymond.

Texas Medical Journal (Austin), September.

167 The Founding of a State Institution for Epileptics in Texas. B. M. Worsham.
168 Cholera Infantum. S. Burg.

Columbus Medical Journal, August.

169 Diarrhea. George M. Waters.
170 Care of the Nose. C. P. Linhart.
171 Female Sterility. Theodore E. Courtright.

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1. **Bright's Disease.**—Porter's article is a lengthy one discussing the pathology and treatment of Bright's disease. The conclusions are summed up in the following: "1. To analyze thoroughly the results of treatment in 'Bright's Disease' one must have a clear conception of the histology and physiological functions of the kidneys. 2. Its complex pathology must be clearly understood. 3. All the etiological factors must be given full consideration. 4. The etiological factors are numerous and very complicated in their action. 5. Only one, if any, of these can be reached by surgical interference. 6. Most of the etiological factors can be modified or removed by well-directed rational dietetics and therapeutics. 7. Histologically speaking, 'Bright's disease' can never be cured. 8. Physiologically speaking, the etiological factors can be modified, and often removed, the symptoms held in abeyance, while the renal glands

perform their functions normally. 9. 'Bright's disease' is by nature an oscillatory malady, accompanied by frequent remissions and exacerbations. 10. Remissions must not be mistaken for cures. 11. Rational dietetics and therapeutics offer the largest possibility for a complete physiological cure. 12. A well-regulated mixed diet, especially if composed largely of the animal class, when it can be tolerated, yields the best results. 13. All therapeutics to be rational must be directed not at the pathological lesion *per se*, but toward establishing a more perfect digestion and metabolism and a decrease in the work imposed upon the renal glands."

2. **Tuberculosis of the Urinary Tract.**—The diagnosis of urinary tuberculosis is discussed at length by Newmark, who insists on the necessity of keeping in mind that there is no one method or one single clinical feature for the diagnosis. All the facilities of laboratory and clinical observation are required sometimes. The frequent desire to urinate with frequent micturition and the pathologic condition of the urine are the chief symptoms met with. The frequent desire to urinate is usually the first symptom to call the patient's attention, and it becomes more frequent as the disease advances. It is soon associated with pain which is usually in the middle of the penis, being different in this respect from that of stone, which is located at the meatus. In the later stages the violent contractions and the periods of inflammation diminish the lumen of the bladder so that it scarcely contains more than a tablespoonful. The urine is that of chronic catarrh, with two characteristic features, hematuria and tubercle bacilli, the latter generally lying parallel with each other in groups, thus being different from the smegma bacillus which may occur singly or in irregular groupings. Decolorization of the smegma bacillus also by acid alcohol is another distinguishing point as is also its more rapid growth in culture. The two places where the bladder tuberculosis is most liable to begin are the ureteral orifices and the trigone, the former especially when it is secondary to renal tuberculosis. In the treatment the diet and proper climatic and hygienic surroundings play as important a part as they do in other tuberculous cases. The internal use of urinary antiseptics and antitubercular drugs should be begun early, and he suggests guaiacol, beginning with 3-drop doses three times a day, increasing up to 20 drops, or the same number of grains of its carbonate. The urinary antiseptics, which are especially indicated when pus is found in the urine, are salol, resorcin, boric acid and methylene blue. He cautions against over-distension of the bladder in the local treatment, and he prefers for instillations weak solutions of corrosive sublimate. Nitrate of silver is of no value, and when a case of chronic vesical catarrh does not respond to a few nitrate of silver applications he is inclined to diagnose it as pyelitis or tuberculous disease. Sometimes it may be necessary to resort to surgery to relieve the pain and install permanent drainage. For this suprapubic cystotomy is preferable. The different forms of tuberculous kidney disease are noted, and he says while there are manifold symptoms the positive diagnosis can be made only by a careful study of the surgical history, and recourse to all diagnostic means, including careful bacteriologic examination.

4. **Silver Vitellin.**—This is a new organic silver compound described in the *Medical Record* of May 24, 1902. It is produced from a proteid derived by chemical manipulations of wheat and subsequently combined with silver. It contains 30 per cent. of silver and is extremely soluble. Its use in gonorrhea is here described by Christian who, from his experience in the University Hospital, Philadelphia, finds it the best silver compound ever offered for this purpose and gives the following reasons for this belief: "1. It is absolutely free from any irritating properties, solutions as high as 5 per cent. causing no discomfort. 2. The gonococci on and beneath the urethral mucous membrane are rapidly destroyed. 3. The amount of urethral discharge is in a majority of cases at once lessened in a marked degree. 4. The actual duration of the disease is shorter than is obtained by the use of any other silver salt. In our cases thirty-eight were cured in from two to four weeks."

6. **Myomectomy vs. Hysterectomy.**—McCosh reports his experience in practice with uterine fibromyomata, describing the operation and illustrating it with cuts. He offers the following conclusions: "1. In young women with uterine fibroids demanding removal myomectomy should always be the operation of choice. 2. Myomectomy is possible and advisable in the great majority of cases of fibroid tumors in young women. 3. For the safe performance of myomectomy the strictest asepsis is needed, otherwise it becomes a most dangerous operation. 4. In the operation of myomectomy fear of hemorrhage should be case aside and bold and rapid methods should be adopted. 5. The operation is attended by the same danger to life as is hysterectomy. 6. The ultimate results as regards menstruation, pain and pregnancy, are satisfactory."

7. **Complete and Partial Hysterectomy.**—Montgomery favors the complete operation, especially the method of Doyen. "It is hardly necessary to say that it consists in raising the uterus with the enclosed tumors through an abdominal incision, and having it held by an assistant well over the symphysis, while an incision is made with scissors through the cul-de-sac upon forceps which were previously placed in the vagina. Through the opening thus formed the cervix is seized, drawn upward and severed with scissors from its vaginal attachment. With slight pressure with the finger the cervix is easily drawn away from the bladder and torn from the broad ligaments. The uterine arteries are generally laid bare and can be seized before bleeding, or upon the first spurt. The uterus is thus pulled upon until the vesico-uterine pouch is reached, which may be broken through, and the uterus is only attached by that portion of each broad ligament which contains the ovarian artery. This is seized with compression forceps external to the ovary and the uterus cut away. The broad ligaments are crushed with the angiotribe external to the forceps and ligated with chromic catgut in the groove. The uterine arteries are ligated with the same material, and the peritoneum closed over the vagina with continuous catgut suture. This suture should be so introduced as to draw up the vagina at each lateral angle." He does not believe that leaving a small portion of the cervix can either form a better vagina or lessen the tendency to senile atrophy. It makes it more difficult to prevent the formation of dead space in which serum or blood accumulates and which, from its proximity to the bowel, can readily become infected. When the cervix is removed there is left a funnel-shaped cavity which drains into the vagina. The following advantages are claimed for the complete operation: "Expedition in performance of the operation; complete and secure hemostasis; increased freedom from septic infection; and the entire removal of an organ, the retained portion of which may be the source of subsequent degeneration."

9. **The Diagnosis of Skin Diseases.**—Dyer offers the following as the cardinal points in the diagnosis of skin disorders: "1. The location of the disease is the first point of study; 2, then the distribution on the particular region on which it occurs; 3, the arrangement of the component parts, or lesions. The lesions themselves must be studied in detail so as to classify the disease. Besides these cardinal points there are certain points in diagnosis which are important in their value as guides: 1. Eruptions which are bilaterally symmetrical are either constitutional in origin or are exposed to the identical local cause on both sides of the body. 2. Parasitic diseases are found on the flexors preferably, or on the exposed parts of the body. 3. The more chronic diseases of the skin become the deeper the color; on the other hand, the brighter and more vivid the color the more acute the disease. Scales are the evidence of chronicity; likewise ulcers and scars. 4. Fluid lesions seldom itch. Papular eruptions almost always itch. 5. Single ulcers are almost always syphilitic, trophic, traumatic or malignant; multiple ulcers are tubercular, syphilitic, or malignant. 6. On the face ulcers are seldom due to other causes than cancer, syphilis or tuberculosis. 7. The color of eruption on the Caucasian is always important in diagnosis. Syphilis is pigmented brown or buff as its eruptions fade or disappear. Leprosy is always shaded brown or purple. Lichen ruber is always violaceous or white. Psoriasis is always pale

things that might harm it, among which should be classed red corpuscles that have lost their functional capacity.

86. New Joint for Ankylosed Elbow.—Pupovac tried to restore normal function to an ankylosed elbow, a sequel of gonorrheal arthritis, by dividing and mobilizing the parts of the joint and inserting a thin sheet of "magnalium" fastened to the bones with catgut. The metal was gradually absorbed and a radiogram eight months later failed to disclose any trace of it. The functional result attained was satisfactory, but would have been better if the patient had consented to the desired after-treatment. The interposition of the metal plate allows time for active and passive exercise of the mobilized joint and muscles after the traumatism of the intervention has healed.

91. Post-Operative Mental Disturbances.—Pilcz reviews a four column list of publications on this subject. He thinks that the coprostasis intentionally induced after abdominal operations is a very important factor in the production of post-operative insanity. This explains the comparative frequency of mental complications after herniotomies and gynecic operations. Other factors are intoxication from preceding medication or from the local disinfectants, and, especially, dread of the operation. He witnessed himself an instructive case of this kind. A young woman was to have been operated on for stenosis of the intestines and spent the day in a private institution expecting the operation. It was constantly deferred on account of external reasons, and finally postponed until the next day and then again from the absence of the surgeon. The same day the patient exhibited symptoms of a transient psychosis of the type of confusional delirium, terminating in twenty-four hours with amnesia. If the operation had been performed which she had been anticipating the case would have gone on record as a post-operative psychosis. There is scarcely any kind of surgical intervention which has not been followed by a psychosis in some case, but the majority occur after herniotomies, operations on the female genitalia or on the eyes. Out of 320 cases which he has collected, 128 were gynecologic, 64 on the eyes, 24 herniotomies, 21 on the male genitalia, 54 various operations, and in 29 no details were given. The mere introduction of a vaginal speculum, the extraction of a tooth, opening an abscess, circumcision of a child, have been followed by a psychosis in at least one instance each. The prognosis is usually favorable aside from actual senile dementia. The French authors urge that the best means of preventing post-operative psychoses is not to operate on the predisposed unless in urgent conditions. Energetic measures against coprostasis should not be neglected in treatment. The danger of attempting a sham operation to relieve some fixed idea is well illustrated by a case described by Picqué. A woman of 34 clamored for an operation on account of an imaginary severe abdominal affection. A surgeon incised the skin under chloroform, making a sham laparotomy. The patient's sufferings were increased afterward. She claimed that the operation had been incorrectly performed and that the uterus was rolling around in the abdomen. Another surgeon performed vaginal hysterectomy, which was followed by still further aggravation of her abdominal ailments, and a third surgeon was found for a laparotomy. Her condition grew constantly worse and she was finally taken to an asylum, where systematic treatment by hypnosis resulted in a cure.

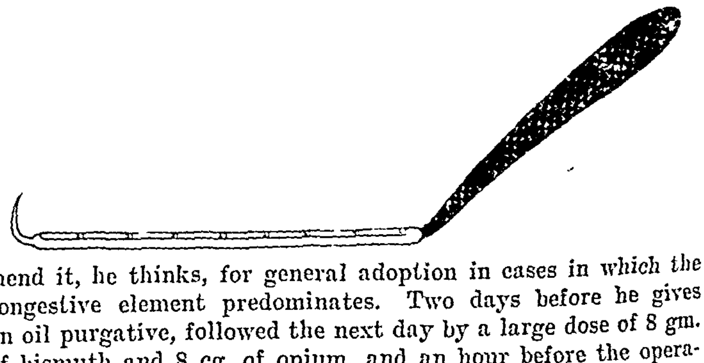
92. Esophagoscopy in the Clinic.—Harmer reports 50 cases of foreign bodies or morbid processes in the esophagus diagnosed at Chiari's clinic by the aid of esophagoscopy. In the overwhelming majority the measure proved of great value and simple of execution. In only 4 out of the total of 50 cases was a positive diagnosis impossible.

93. Significance of the Optic Thalamus.—Probst concludes from his research that the optic thalamus has a manifold function. It can not be designated as the organ of this or that activity as various authors have attempted to define it, but it presides over the most varied functions. It can be regarded as the main switchboard between the periphery and the cerebral cortex, where connection is made between the most widely diverse sensations and impressions, both central and peripheral.

96. Value of Pyridin in Pertussis.—Mya attributes great importance to local disinfectants in the treatment of whooping cough. He found that the disease was rapidly cured in three cases by endolaryngeal injection of a 5 per cent. solution of menthol. The disadvantages of this method, however, preclude its general use, and he has since accomplished the same or even better results with pyridin. Twice a day 4 or 5 gm. of pyridin are poured on a plate kept at the foot of the bed. The fumes of the pyridin have an unmistakable inhibiting action on the development of bacteria, as has been abundantly established by experimental research. He administers the bromids internally, and has a high opinion of the combination of the bromids of potassium, of strontium and of ammonium, in the dose of 1 to 3 gm. to three years of age, and after this age 4 gm. in the twenty-four hours. The bromids diminish reflex excitability and especially that in the epileptogenic zone, and are well tolerated by children. He supplements this treatment by changing the bed and body linen frequently, frequent general baths and daily disinfection of the mouth with a 1 per 1000 solution of potassium permanganate, and especial care for tempting and nourishing food. Cacchiole adds that Mya has found pyridin useful also in cases of nervous asthma.

97. Guaiacol Salve to Abort Mumps.—Grande has been successful in aborting epidemic parotitis in his army experience by local application of a 5 per cent. salve of guaiacol rubbed into the region over the parotid glands and scrotum. It occasionally induced a transient eczema in the latter locality, but never elsewhere. The antithermic, analgesic and antiseptic action of guaiacol has been demonstrated by Maragliano, Linossier and others. Lenz and Bocchi have also reported its great efficacy for local application in cases of orchitis and of epididymitis.

98. Cauterization of Hypertrophied Prostate Through the Rectum.—Negretto has received a number of communications from various surgeons asking for particulars in regard to his method of cauterizing the enlarged prostate by way of the rectum, with a Paquelin or galvano-cautery, first published in 1895, but improved later. Among the letters received is one from E. Andrews of Chicago, who asks: "Do you seek to penetrate to the center of the gland? How broad is the opening? Is there any shock? etc." In reply Negretto gives a cut of the hook, one centimeter long, which he has devised for the purpose, and describes the details of 11 cases thus operated on. All were completely and permanently cured, except one case in which the prostate was enormously enlarged and indurated, with serious vesical complications. The intervention seems to have a special action on congestion of the gland, and its simplicity, facility and rapid efficacy, with its freedom from danger and its non-interference with the genital organs, commend it, he thinks, for general adoption in cases in which the congestive element predominates. Two days before he gives an oil purgative, followed the next day by a large dose of 8 gm. of bismuth and 8 cg. of opium, and an hour before the operation one or two rectal injections of glycerin. He prefers general anesthesia, but when this is impracticable resorts to an alcoholic solution of chloral and morphin, which enables the operation to be performed with little or no pain. The patient in the position for perineal cystotomy with the pelvis raised high, he dilates with the old model of the Weiss speculum and packs the rectum around the field of operation with gauze. He then removes the speculum and inserts the left forefinger in the rectum, fixing with it the center of the prostate. He then introduces the hook shown in the cut, guided by the finger, and inserts it in the prostate, with slight traction to ensure that it will not slip. He notes on the graduated handle of the



ook the number of centimeters in order to detect at once any ange in its position. The hook is then given in charge to an sistant; the speculum is replaced and other strips of gauze plied if necessary to keep all the folds of the rectum out of way. He then cauterizes with the Paquelin or the galvanotery all around the hook. He applies the cautery knife flat nd cauterizes on a level plane and across. The size and depth f the eschar are proportional to the size of the gland. As a eneral rule he finds that a rather superficial cauterization is nough to entail the involution of the gland. When the gland s very large, before he withdraws the cautery, he pushes it until it reaches the point of the hook. The entire operation s complete in two minutes. If necessary, the assistant places his hand on the suprapubic region in order to render the field of operation more prominent. After the intervention another large dose of bismuth and opium is given and a Nelaton catheter is left permanently in the bladder for a few days, when it is changed and the urinary passages systematically disinfected. He gives an oil purgative the sixth to seventh day, and the gauze is evacuated with the alvine discharge. After ten or twelve days the catheter is removed and the patient urinates naturally. He has never had any mishaps or symptoms except that the urine was blood stained in a few cases for a day or so. Three of his patients were 59 years old, six between 67 and 70 and the others 71 and 73. The prostatic troubles were of one ten years' standing and in some there had been infectious omplications. One case is particularly interesting. All the obes of the prostate were much enlarged and yet cauterization of the middle lobe alone was followed by retrogression of the entire gland, the three lobes sharing in the relief of the congestion. The patient had been operated on for urinary calculi and had been treated later for mucopurulent cystitis. He returned a year later with symptoms of prostatic trouble and the vasa deferentia were resected. The symptoms recurred after a month with others indicating calculi. Six were removed by epicystotomy, at which time the prostate was seen to be much enlarged. A mucopurulent urethritis followed and finally complete retention. Cauterization by way of the rectum as above described, completely freed the patient from all his disturbances and news from him more than a year later confirm his permanent recovery. He works and walks without disturbances, and micturition is voluntary and normal.

104. **Ecchymosis on Dorsum of Foot After Fall on the Feet.**—Fiori has observed four cases of a fall from a height, the subject landing on his feet, which were followed by a large patch of ecchymosis on the dorsum of one or both feet. He found this little point important in one or two medicolegal cases in which the ecchymosis was supposed to be the result of violence instead of trauma.

105. **Ten Splenectomies for Malarial Splenomegalia with Torsion.**—Schwarz reviews the details of his 10 cases and states that there was torsion of the pedicle in 6. This complication renders splenectomy imperative, and he advises it in all cases of pronounced malarial enlargement of the spleen. The extirpated organs weighed from 800 to 3500 gm. All of the patients recovered except one, who succumbed to a peritonitis, commencing the ninth day, and one who was in advanced cachexia when operated and survived two months. One of the patients has had recurrences of malarial attacks at each menstruation, but they vanished during a pregnancy and lactation. Otherwise the patients are all in good health, the blood apparently normal.

106. **Talma's Operation.**—Carini has collected 63 cases of true ascites from cirrhosis of the liver, treated by Talma's operation. Of this number 25 were cured, 7 improved, 9 not affected, and 22 have died, that is, about 40 per cent. were cured. The cirrhotic process is not directly affected and the operation is contraindicated in case of too great depression of the vital forces or if the functions of the liver are seriously compromised or the peritoneum is inflamed. It is equally applicable to cirrhosis with atrophy, simple hypertrophy, biliary hypertrophy and the third stage of Banti's disease. The prospects are better the earlier it is applied.

108. **Treatment of Aneurism.**—Romano has a patient with a large aneurism of the aorta who has been kept in good condition for fifteen years and more. The symptoms subsided under treatment with leeches to the anus, purgatives, saline waters by the mouth and rectal injection. Alcohol and tobacco were forbidden and a light milk and vegetable diet ordered, with sodium iodid to reduce arterial pressure. The local pains were combated with revulsion. As the patient improved he disregarded the directions, with the result that the symptoms of oppression recurred and were very serious on three occasions, but subsided on resumption of the above measures.

111. **Study of Latent Tuberculosis in Tonsils, Etc.**—Tarchetti inoculated 17 guinea-pigs with scraps from the tonsils or vegetations of 14 children affected with ear or glandular disease. None of the animals showed traces of tuberculosis. Dieulafoy reported in 1895 that in a similar series of experiments by him, 13 to 20 per cent. of the animals inoculated succumbed to tubercular infection. He therefore assumed a latent tuberculosis in the tonsils and vegetations of such cases.

112. **Cytodiagnosis.**—Tarchetti has found that the findings supposed to be constant in tuberculosis are encountered in other pleuritic and peritoneal effusions. On the other hand, he found polynuclear white corpuscles and lymphocytes predominating in unmistakably tuberculous effusions.

Book Notices.

Materia Medica, Therapeutics, Medical Pharmacy, Prescription Writing, and Medical Latin. A Manual for Students and Practitioners. By William Schleif, Ph.G., M.D., Instructor in Pharmacy in the University of Pennsylvania. Series Edited by Bern G. Galladuet, M.D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, New York. Second Edition. Revised and Enlarged. Cloth. Pp. 389. Price, $1.75. Philadelphia and New York: Lea Brothers & Co. 1902.

A Text-Book of Histology and Microscopic Anatomy of the Human Body, Including Microscopic Technique. By Dr. Ladislaus Szymonowicz, A.O., Professor of Histology and Embryology in the University of Lemberg. Translated and Edited by John Bruce MacCallum, M.D., Johns Hopkins University, Baltimore. Illustrated with 277 Engravings, Including 57 Plates in Colors and Monochrome. Cloth. Pp. 435. Price. $4.75 net. Philadelphia and New York: Lea Brothers & Co. 1902.

Practical Obstetrics. A Text-Book for Practitioners and Students. By Edward Reynolds, M.D., Visiting Surgeon to the Free Hospital for Women, and Franklin S. Newell, M.D., Assistant in Obstetrics and Gynecology in Harvard University. Illustrated with 252 Engravings and 8 Colored Plates. Cloth. Pp. 553. Price, $3.75 net. Philadelphia and New York: Lea Brothers & Co. 1902.

Disinfection and Disinfectants. A Practical Guide for Sanitarians, Health and Quarantine Officers. By M. J. Rosenau, M.D., Director of the Hygienic Laboratory and Passed Assistant-Surgeon U. S. Public Health and Marine-Hospital Service, Washington, D. C. Illustrated. Cloth. Pp. 353. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

Text-Book of Anatomy. Edited by D. J. Cunningham, F.R.S., M.D. (Edin. et Dubl.), D.Sc., LL.D. (Glasg. et St. And.), D.C.L. (Oxon.), Professor of Anatomy and Chirurgery, Trinity College, Dublin. Illustrated with 824 Wood Engravings from Original Drawings, Many Printed in Colors. Cloth. Pp. 1309. Price, $1.75. New York: The Macmillan Co. 1902.

Development and Evolution, Including Psychophysical Evolution, Evolution by Orthoplasy, and the Theory of Genetic Modes. By James Mark Baldwin, Ph.D. Princeton, D.Sc. Oxon., LL.D. Glasgow, Stuart Professor in Princeton University. Cloth. Pp. 395. Price, $2.60. New York: The Macmillan Co. 1902.

The Force of Mind or the Mental Factor in Medicine. By Alfred T. Schofield, M.D., M.R.C.S., etc., Hon. Physician to Fruedenheim Hospital. Cloth. Pp. 309. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

Twenty-fifth Annual Report of the Board of Health of the State of New Jersey, and Report of the Bureau of Vital Statistics, 1901. Cloth. Pp. 459. Trenton, N. J.: John L. Murphy Publishing Co. 1902.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders of the Adjutant-General's Office, Washington, D. C., Sept. 18 to 24, 1902, inclusive:

David Baker, lieutenant and asst.-surgeon, member of a promotion board at Fort Leavenworth, Kan.

Joseph T. Clark, captain and asst.-surgeon, to report in person at Washington, D. C., to Major William C. Borden, surgeon, commanding the General Hospital, Washington Barracks, D. C., not later than September 30, for temporary duty in connection with the hospital to be established during the encampment of the G. A. R., and on the completion of this duty to return to his proper station.

Jere B. Clayton, lieutenant and asst.-surgeon, relieved from duty at Fort Myer, Va., to proceed to Fort Riley, Kan., for temporary

It is the simple application of ordinary surgical principles. Operate and remove pus every time you can. There is nothing more settled than that. An abscess should always be opened and evacuated as soon as possible. I agree with Dr. Noble that ordinarily you had better let these cases alone, and not do too much at the time you open, unless it is an old abscess. It is not difficult ordinarily to make a diagnosis, because, first of all, you generally have a well-marked history of an inflammatory process, such as temperature, pulse, pain, etc. Second, if you are familiar with the touch you generally get a little indentation behind the uterus. and that is the point for making your incision. I use the knife only, and then dilate with a uterine dilator. Formerly I used an aspirator, and then dilated with a dilator or scissors. It seems to me that this has saved thousands of women, not only from long suffering but subsequent abdominal section.

Dr. W. H. Humiston, Cleveland, Ohio—Time and experience will bear out Dr. Noble's statements. I had a case a year ago of streptococcus infection following labor, in which the temperature ran up to 105 F., the woman had daily chills and a very weak pulse. With a few drams of chloroform and fifteen minutes' time, I had the abscess evacuated and she went on to complete recovery. She became pregnant again in another year. This shows the effects of an early trivial operation. If the woman had been allowed to become profoundly septic, an abdominal operation would have been required and possibly the result would have been fatal. In acute infectious conditions of the pelvic organs, radical abdominal operation is attended with a high mortality, and where we have the conditions as mentioned by Dr. Gordon, it is best to open at the most convenient place. The operation is so slight in its effect, and the results so extremely gratifying, that it should always be done. If the radical operation is necessary later on, the woman will be in condition to stand it.

Dr. E. W. Cushing, Boston—I agree with Dr. Noble and Dr. Gordon. That is the way I began to treat these cases, but under the progressive impulse of the Philadelphia school some of us were induced to do everything through the abdomen. I know I have lost cases by trying to do such an operation when it could have been done with safety through the vagina and just as easily. It is not unusual for these collections to be very large, and be mistaken by the attendant and even the surgeon for an ovarian tumor. The acute symptoms may have subsided; the mass is as large as an infant's head, fixed so that operation by abdomen for ovarian tumor is sometimes done. In other cases which are acute, the pus is liable to be septic. It is safe to open the abdomen and let out the pus from an old pyosalpinx, but it is a different thing to let virulent streptococcus pus soil the abdominal cavity where there is every probability of acute infection, but no one can tell beforehand the nature of the pus. It is my general rule to let the pus out from below, if I can possibly get at it. It is easy, simple and harmless, and it can be done with a little cocain in very bad cases where an abdominal operation would be fatal.

Dr. T. J. Watkins, Chicago—The difficulty usually lies in determining what class of cases are adapted to this method of treatment. Gonorrheal cases are bad ones for vaginal section and drainage, because of the large amount of exudate that occurs and because the germs are liable to remain latent and cause trouble after an indefinite length of time. Tubercular abscesses are also bad cases for this treatment. Puerperal cases are probably the most satisfactory, as the exudate tends to entirely disappear by absorption after the pus has been removed. It is seldom indicated in gonorrheal cases, except in the presence of large abscesses. I recently looked up my statistics of drainage cases for five years, and found that about 10 per cent. required subsequent operation.

I am glad Dr. Noble brought out the point that many of these cases are completely cured by this operation; 90 per cent. of mine were cured. I pack with gauze and remove it gradually, so that it is all removed by the end of the fifth or seventh day. With this method, convalescence is more rapid, less painful, and the amount of suppuration is less than with tube drainage. Exploratory vaginal section is of great value in selected cases of puerperal cases, and in my experience it has occasionally been a life-saving procedure.

Dr. G. B. Massey, Philadelphia—I come from Philadelphia, but do not feel guilty of the Philadelphia error mentioned by Dr. Cushing. I remember protesting in the Philadelphia Obstetrical Society against flooding the abdomen with pus as long as ten years ago, claiming that mere lancing of the abscess at its lowest point was sufficient. In treating these acute abscesses, the vaginal puncture ought to be made early, to avoid perforation of the bowel.

Dr. Hugo Ehrenfest, St. Louis, Mo.—The effect of vaginal drainage is dependent on the location of the pus. We must differentiate between an abscess in a tube, in the peritoneal cavity, or one in the parametrium. The results are undoubtedly excellent when pus is in the parametrium, but not so good in pyosalpinx, where the abscess cavity is lined by mucous membrane, which offers a good shelter to the germs. I am fully in accord with the statement made by Dr. Watkins that gonorrheal cases do not give as good results as puerperal cases, and we find the explanation in the fact that in gonorrheal cases the suppuration occurs in the tubes, while in puerperal cases the abscess usually is in the parametrium or pelvic cavity.

Dr. Thomas G. Cullen, Baltimore—In those cases where the inflammatory exudate lies between the folds of the broad ligament instead of in the tubes or pelvic cavity we invariably drain extraperitoneally as advocated by Dr. Noble. We make an incision similar to the one employed in the appendix operation and on arriving at the peritoneum gradually by blunt dissection reach the connective tissue of the broad ligament without injuring the peritoneum. In one case the peritoneum was peeled back so readily that I thought we had perforated it, thereby entering the pelvic cavity. Fearing that some pus might have entered the pelvis, I made a median incision and found the peritoneum everywhere intact, but it was so thin that the dividing wall was thinner than parchment. Great care must be exercised in the evacuation of these extraperitoneal broad ligament accumulations.

Dr. Gordon's point is a good one. After making a transverse incision one inch in length through the vaginal mucosa just posterior to the cervix, I gradually peel upward, following close to the posterior surface of the uterus. As soon as the peritoneum is felt this is punctured with a uterine dilator which can not injure any pelvic structures. If the opening in the vault be too small two uterine dilators introduced simultaneously and at right angles to one another will easily afford the necessary space. Where there are purulent accumulations in the pelvis careful scrutiny should be made to determine if secondary pockets exist. Both tubes should also be examined and they can be split and drained if necessary. The mere opening of Douglas' sac with no further search is often of little value on this very account. In acute cases the walls of the abscess sac rapidly collapse, but in chronic cases the resultant scar tissue prevents obliteration of the abscess sac for some time, and great care must be taken to maintain free drainage.

Dr. Noble, in closing—I am pleased at the unanimity of opinion on this subject. Dr. Humiston spoke of puerperal cases, to which I have alluded. The operation does the most good in puerperal cases. It not only cures the immediate trouble, but saves the woman's tubes. You will seldom have to take them out when you drain, provided the puerperal case is not one of gonorrheal infection. Ninety per cent. of cases, when properly incised, do best when drained with nothing at all. Leave them alone, provided you do not made a "puncture." Dr. Kelly's work has done us much good, and also some harm, because the term puncture indicates a little hole, and usually too small an opening is made. I oftentimes make an opening from one bone to the other, opening up the pelvis widely. If you make it that way, big abscess cavities will collapse and cure themselves without any trouble. If we have a small abscess, and that is the class of cases in which the operation is least applicable, we may have to pack to get it to close up. I almost never drain with gauze or tubes. It often lessens the value of the work.

I, too, have suffered from the teaching of the Philadelphia school, and the best result I have been able to get with the radical operation is 27 per cent. mortality in the complicated cases. This is shocking when you can get a 2 per cent. mortality with the drainage operation.

As to the comparatively bad results in gonorrhea, this agrees with my own opinion, and is indicated by the fact that I state in my paper that I have operated on but a single recent case of gonorrheal abscess. In old gonorrheal cases, however, where the woman has had pus tubes for years, incision and drainage have given good results. I am fully in accord with the view that the gonorrheal cases are least adapted for the drainage operation.

In one point I can not agree with Dr. Cullen. Instead of going in from above, I think it far better to work from below. I never make an incision above Poupart's ligament, unless the abscess distinctly points in the groin. If the subcutaneous tissues are infiltrated, so that you know the abscess is coming out along the round ligament, or just under the skin, then make an incision there, but where the exudate is deep in the broad ligament, it is much more easily and better reached through the vagina. Neither need you fear a hernia afterwards. In almost every case drained above Poupart's ligament a hernia results. So far as I know, I have operated on about sixty of these cases, and I have never injured the ureter, have never had any hemorrhage, nor injured the bowel.

Clinical Report.

SUPPRESSION OF THE SECRETION OF URINE FOR SEVEN AND ONE-HALF DAYS

WITHOUT SEVERE SYMPTOMS OF UREMIC POISONING, THE PATIENT RECOVERING.

GEORGE SEILER, M.D.
ALMA, WIS.

I. B., a saloon- and store-keeper in the country, aged 48, was taken sick with "lumbago" June 6, 1902. This lasted about three days. On June 9, the patient had an attack of renal colic and passed about 75 to 100 renal calculi the size of a millet seed and some as large as small peas. The urine passed contained a little blood. June 14 he had another attack of renal colic and from this day on the excreting faculty of the kidneys was entirely suppressed for seven and one-half days.

The patient is a very heavy-set man, weighing 250 pounds. His abdominal walls are so thick from fat that palpation of the abdominal organs is very difficult. He was never seriously sick up to last September, when he had his first attack of renal colic after and during which he passed a number of renal calculi of the size of small peas. He was then free from an attack up to the present time.

Previous to the suppression of urine, which occurred June 14, he passed a little less than the daily usual amount of urine and complained of some pain, especially in the right lumbar region on deep pressure and without it. In the afternoon of June 14, he had an attack of colic again for which I gave a hypodermatic injection of morphin, which relieved the pain. I then gave him nitrate of potassium with extract of henbane, ½-grain doses of calomel and bicarbonate of soda every fifteen minutes followed by sulphate of magnesia. The next morning, as he had not passed a drop of urine, I introduced a soft catheter, but did not get any urine. The same was the case June 16.

Treatment was continued, with the addition of warm wet applications to the lumbar region and later wet packs twice a day. In the evening Dr. Tenney of Alma saw the case with me and suggested tincture of digitalis in 10-drop doses every three hours and Rochelle salts repeated oftener. I had also given a hypodermatic injection of pilocarpin, one-third grain at 6 p. m., which produced a copious sweat lasting fifteen or twenty minutes. June 17 the patient became drowsy and vomited often greenish slimy water with great force; no urine by catheter; bowels moved often.

June 18 and 19 the patient was in almost the same condition but more drowsy and vomiting oftener, no urine secreted, pulse and temperature normal. I kept up the wet pack and pilocarpin injections twice a day and also gave two drops of croton oil in glycerin. June 20: condition the same, treatment continued. Towards evening patient had a severe spell of pain in the right lumbar region with pains lancinating toward the right testicle and glans penis, probably caused by the stone, which was suspected to blockade one ureter, moving towards the bladder. A hypodermatic injection of morphin and atropin relieved the pain.

On the morning of June 21 his condition was unchanged, save that he was not so drowsy and did not vomit so often; no urine by catheter. Dr. John Lyman of Eau Claire, Wis., who was called in consultation, advised continuation of treatment and ½-grain doses of calomel every one-half hour continued for forty-eight hours as advised by Senn. As there was some dulness over the region of the right kidney he introduced a trocar at three different places, but only withdrew some blood, no urine. This excluded a hydronephrosis. Any other operation was, of course, out of the question. That evening the patient passed about one-half pint of almost clear straw-colored urine, which showed slight traces of blood under the microscope. The same treatment was continued and the patient passed almost a gallon of urine in the next twenty-four hours, vomited from one to four times a day, his drowsiness disappeared and urine was passed without pain, but the patient suffered a great deal of pain at the point where the trocar was inserted and temperature went up to 100 or 101. The pain diminished in the course of four days.

June 23: patient was very much improved and urinated freely more than a gallon of clear urine without a trace of blood. His bowels were kept open by Rochelle salts; the hypodermatic injections of pilocarpin were discontinued, as was also the calomel, as traces of ptyalism appeared. June 26 the patient was able to sit up and improved steadily. July 17: patient passed some gravel about the size of small peas and of irregular form; he has continually a sensation as if needing to pass water and a drawing feeling in his penis and still some deep-seated pain over the right kidney; otherwise he improved steadily and attended to his business.

The principal questions in this remarkable case are: First, what was the cause of the suppression of the secretion of the urine? 2. If there was an obstruction of one ureter—probably the right one where patient complained of the most pain—why did not the other kidney secrete urine? 3. Is it, as some authorities say, possible that if one kidney does not work the other one will in a sympathetic way refuse to work? The greatest wonder is that the patient did not show more profound symptoms of uremic poisoning and that he did not die in coma.

Is there such a case on record? I have heard there is nothing new under the sun, but I thought the case remarkable enough for publication.

Organization of the Medical Profession.—The medical profession has a power for good in the community which is not equaled by that of the clergy or the legal fraternity. Its power is, however, not exerted. It is dissipated by lack of concerted effort, and wasted by internal difference of opinion. . . . Why is it that after a hundred years of practice among the people, the educated and the ignorant alike, our influence is so transient, so feeble, that the most absurd fad, the most hare-brained delusion, the most fantastic fraud that comes along spreads its pernicious poison as rapidly among the people as fire in tow? Where is the educational power over the people of which we boast in our addresses and applaud in our after-dinner speeches? How loyal are the people to us, because of our single-mindedness and devotion to them in their sickness and affliction? How much weight has the opinion of the medical man in a public matter, and with what smiling indifference do not those who make the laws listen to his protests? There is something wrong here. There is manifestly some foolish want of thought in this ridiculous situation. . . . There are doubtless many things to which this state of affairs can be ascribed. One cause, however, stands out as first in importance. It is lack of organization.—Sweeney, in *St. Paul Med. Jour.*

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CHAUVINISM, ETC., IN MEDICINE.

Dr. Osler's address[1] on "Chauvinism in Medicine" before the Canadian Medical Association is an excellent one and is worthy of attention. Chauvinism in medicine is a reality, and it is not limited by national boundaries alone; it may exist in limited sections of the same country—though perhaps its most striking manifestations are seen existing together with other national prejudices. The subvariety of provincialism which Osler makes is strongly in evidence, and there was a certain appropriateness in that his address was delivered in a province where any outsider, however eminent he may be, unless with British or colonial qualifications, must take a course in a local institution before receiving license to practice medicine. We have troubles of our own; sectionalism is not unknown in the United States, as is innocently shown in many unconscious ways by most of us. We are all fallible and none of us live quite up to our ideals. The main thing is to have our ideals and try to live up to them. There is, however, more of it shown in the medical laws of Canada than in those of any commonwealth on this side of the border. Whether Dr. Osler's hearers made any personal application of his remarks to themselves we do not know, but they might have done so with profit. We all have our weaknesses and faults, and it is good discipline to be kindly reminded of them, a service we trust we are always willing to receive and reciprocate. At any rate we should be.

American physicians, and in this we here include Canadians, have one advantage over foreigners in this respect. It is a sort of fashion with us to go to Europe and broaden our minds and culture by imbibing from the time-honored founts of knowledge and thus free ourselves from a narrow Americanism that might grow too rank on our own soil. It is true that sometimes the tourist returns with an exaggerated notion of his acquisitions, but even that helps to check a too prominent nativistic Chauvinistic tendency, although it may be at the expense of occasionally substituting for it an even more objectionable one. It is the misfortune of our European confrères that they do not more often reciprocate; they might even find something to profit them here and enlarge their "Weltcultur" and ideals. We have here two tendencies to combat, only one of which is mentioned by Dr. Osler; the other is a lack of appreciation of our own professional work and standing, which is as bad in its way as Chauvinism. This, however, as Mr. Kipling says, is another story.

It would be interesting to know how Dr. Osler's remarks were taken by his hearers where he spoke of the value of a knowledge of the literature of the profession of different countries. How much does the average Canadian practitioner know of American current medical literature? Probably not much, and the American still less of what is being done in Canada. Of course, the greater loss is to the one who has the largest range of literature to miss, but the matter is not one for congratulation on either side. There is at the present time altogether too much nationalism, provincialism or Chauvinism, whatever one may choose to call it, in a profession that ought to be free from it, on both sides of the line. At present we fear (and this is suggested to us by a passage in one of the other addresses delivered at the meeting) that American medical literature is more familiar over there in the form of the "Medical Short Cuts" and allied publications than by those that are really creditable and representative. This is not what it should be.

What Dr. Osler says about the multiplicity of medical examining boards is true, but we think he hardly recognizes sufficiently the conditions in this country that have made the evils he mentions unavoidable. It will take time for matters to so arrange themselves here that any uniformity or reciprocity can be general between the states in the matter of medical registration. The reasons for this seem too obvious to require statement to our readers, and the present state of affairs, bad as it is in some respects, is infinitely better than the old one of absolutely no restriction—or the unquestioning acceptance of diplomas from every source. As he intimates, the condition is less excusable in Canada than in the United States, as there has there been a greater uniformity in medical education and the boards have had a longer existence, and all he says may be accepted without qualification for the Dominion. In our own country we will probably gradually relieve the greater hardships in many ways; for example, by providing for special examinations, as in Maryland, and by giving a larger discretionary power to examining boards. There will, in our opinion, however, be no uniformity until the general government makes a qualification of its own, which must be obtained by all who enter its service and which the states would in time be compelled to recognize of their own accord. Whether he is right in his view that examination for license should exclude the more theoretical and scientific subjects absolutely is an opinion open to question, but there is little doubt but that injustice may be done by giving too much importance to them, especially in the examinations of other than recent graduates. The machinery of our registration boards is new and has not yet worked itself into perfectly smooth action; in time we can expect better things and all criticisms like those of Dr. Osler have their utility.

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[1] THE JOURNAL A. M. A., Oct. 4, p. 855; and Phila. Med. Journal, Sept. 27, and Canada Lancet, October.

There are many other things in the address that deserve comment, but space is wanting. It is one that makes for professional righteousness, and we therefore the more willingly call the attention of our readers and the profession generally to its admirable exposition of matters that we can not take too much to heart. Its main contention for a broader liberialism in our ideas and practice, free from all local provincial and parochial littleness of feeling and speech, has seldom if ever been so well stated to our profession.

THE HEMOLYMPH GLANDS IN PERNICIOUS ANEMIA.

Until recently the pathogenesis of pernicious anemia belonged to the most obscure of medical problems. While far from elucidated as yet, the newer observations in regard to cellular toxins, especially the lysins, and still more particularly the hemolysins, seem to afford a new and secure basis from which to attack anew the problems of the evident excessive destruction of red corpuscles in this disease.

The simplest and most direct explanation of the excessive destruction of red corpuscles would be that it is due to the presence in the plasma of the blood of a hemolysin, whatever the origin of that substance might be. No one has demonstrated the appearance of any special autohemolysin in the blood of patients with the disease, however, and the conditions are probably not so simple as suggested. Continuing for a moment this thought of a special hemolysin, the next step would be to produce an antihemolysin, just as can be done in the case of so many of the other lysins and similar substances.

This pleasant dream must give way for the present to a consideration of the facts as they stand from the results of recent studies, especially by the application of careful microscopic methods. We refer to the investigation by Warthin[1] of the changes in the hemolymph glands in pernicious anemia. In eight cases thoroughly studied he finds that there is excessive phagocytosis of red cells in the spleen, the bone marrow, the lymph and also the hemolymph glands. Hunter claimed that the destruction of the red cells occurs within the portal area, but Warthin finds the bone marrow and prevertebral lymph and hemolymph glands contain abundant evidences of blood destruction in the form of phagocytes, in the interior of which red cells are undergoing disintegration. In the hemolymph glands are found varying degrees of dilatation of the blood sinuses, phagocytosis of red cells, often associated with increase in size and apparent increase in the number of the glands. Corresponding well to the intermittent clinical course of the anemia these changes are found in varying degrees in different cases. The changes described are not regarded as absolutely specific of pernicious anemia, because they are found also in sepsis and other similar processes, and in less degree even normally. It is the extent they reach that is significant. The pigmentation of the liver and kidney in this disease is a secondary one, due to the deposition of hemosiderin in granular form in the endothelial cells of these organs.

Viewed in this light the fundamental question in the etiology and genesis of pernicious anemia is: What is the cause of the increased phagocytosis of red cells? This question can not be answered now. Two possibilities are considered. There may be at work unknown substances that act primarily on the phagocytes, stimulating them to increased consumption of red cells. Or there may be unknown substances that so alter the red cells that they become fit prey for the phagocytic activities of the cells in the spleen, the marrow, the lymph glands and the hemolymph glands that normally dispose of useless red cells. There is warrant for assumptions like these in the action of toluylenediamin, which experiments show causes increased destruction of red cells by phagocytosis in the organs just named. This destruction of red cells by phagocytes is called hemolysis also, but it is an intracellular hemolysis, or erythrocytolysis, as distinguished from the hemolysis that may occur in the circulating blood in the presence of certain substances that cause diffusion of the hemoglobin.

THE UNCERTAINTY OF LIFE.

One of the largest life insurance companies of this country recently published a pamphlet containing a list of 435 persons at whose deaths policies were paid by the company during the year 1901, though the insurance on their lives had been in force less than a year. Considering how carefully medical examiners are selected as a rule and how thoroughly medical examinations are made, for the so-called big companies at least, this would seem a surprisingly large number of deaths early in the insured term. It represents actually about five out of every thousand policy-holders for whom risks were assumed by the company during the year. The risks were at least of average amount, so that nearly one million of dollars was paid out. As it is well known that first-year premiums on life policies are practically entirely eaten up by the expenses incurred in securing the risk, these precociously matured policies represent, we may say, a total loss to the company. Far from considering this item of loss as due to any defect of the insurance system or any failure of their medical examiners to detect pathologic conditions that were manifestly present and should not have been missed, the company in question sets it down to the inevitable uncertainty of human life, and uses the startling story of this costly bit of life insurance experience as a precious idea for their advertising department.

The company's officials are justified in assuming this very sensible position by data that may be obtained from an analysis of the death list. Unfortunately, the cause of death is not given, and the omission mars the value of the document considerably for physicians. The deaths are distributed throughout the year as follows:

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[1] American Journal of Medical Sciences, 1902, cxxiv, 674-718

85 in the first quarter, 118 in the second quarter, 109 in the third quarter and 123 in the fourth quarter. The lowest number of deaths in any one month was 16, in the first month. The highest number was 51, in the seventh month. The fact that the deaths were more frequent toward the end of the year would seem to absolve the medical department of the company for much of the apparent blame that attaches to it. *An interesting item of comparison in this matter is the alleged fact that nearly ten thousand applications for life insurance of nearly $30,000,000 in amount were refused by the same company during the same year.*

The deaths occurred among persons of all classes and ages. There were students as well as professors and almost every possible occupation has its representative in the death list from that of the proverbially healthy farmer to the dangerous life of the train hand and locomotive engineer. There are a full dozen physicians in the list, three of whom died during the first three months of their insurance. None of these had policies for more than a thousand dollars except one, and he had but two thousand on his life, so that it seems improbable that any inkling of impending fate had come to them or they would surely have applied for larger amounts, the medical examination being the same for applications up to $25,000.

INTERNATIONAL RECIPROCITY IN MEDICINE.

A Vienna surgeon[1] is coming to Chicago to treat the daughter of a millionaire. A Chicago doctor has been asked to go to England to treat the daughter of one of the nobility. If some English physician is now summoned to Austria the circle will be complete and we may expect the capitalization of a syndicate to exchange physicians between countries. Our only authority, however, for the invitation from a British peer to the Chicago doctor of great self-repute and advertising ability is his statement in the advertisements in the Chicago newspapers. These say that he has refused the tempting offer, with its munificent remuneration, and will heroically devote himself to the patients dependent on him here. This decision is wise. In view of the thorny path in Germany for our export meat because of inferior pork, the nation should see to it that all products sent to foreign countries are of first quality. With this condition assured, we shall not object to the American physician taking his place in "the American invasion."

ONE ADVANTAGE OF TEA DRINKING.

The fact recently noted in our news columns (October 4, p. 848) of the lesser cholera mortality among the Chinese in the Philippines than among the natives and even less than among Americans in proportion to cases is possibly explainable. It is well known that the Chinese, or at least a large proportion of them, are much less addicted to raw water drinking than are other races. Their common drink is tea, of course in infusion, and in the boiling of the water they unconsciously protect themselves. That they do not escape entirely is easily accounted for, the cholera germ reaches their intestinal tract in articles of food which are not only not disinfected, but probably often directly infected with the germs. It is said, indeed, that the introduction of cholera into Manila was through the importation of Chinese vegetables. Cholera rages in China among the Chinese, but we can readily imagine it might be much worse were their habits as favorable for imbibing the germ as is the case among other races. It is not a racial but a dietetic peculiarity that protects them, and the lone redeeming feature in their hygienically sinful lives.

INCOMPETENT HOSPITAL MANAGEMENT.

A recent unfortunate occurrence of the death of a patient in a well-known hospital from an overdose of strychnin calls for some comment. It reveals a very bad practice—which we trust is unique—of leaving the making up of solutions of powerful drugs in the hands of undergraduate nurses, and the presumption, to call it no worse, of a superior nurse who, with or without the connivance of the pharmacist, introduced the use of one-grain tablets for the purpose of making up such solutions. Another very bad feature of the case is the attempt to lay all the blame on the undergraduate nurse who administered the fatal dose, under the not unnatural supposition, under the circumstances, that she was giving the ordinary tablet dose. *What business a hospital could have with one-grain tablets of strychnin is hard to appreciate, and the practice followed by the responsible parties is as reprehensible as their conduct in regard to the young woman was objectionable. The blighting of her career for an error, serious as it was in its results, for which others who go uncensured were primarily responsible, is inexcusable. The case illustrates the lack of proper appreciation of their functions on the part of some who are too ready to take on responsibilities that in no wise belong to them, as in thus ordering the one-grain strychnin tablets, and then to put off the consequences of their misdoings on comparatively untrained and irresponsible subordinates.* The censure of the administration of the hospital by the coroner's jury seems well deserved, and we trust its medical staff will succeed in promptly securing the reforms they are demanding.

THE NEW GOSPEL OF DIRT.

A writer announcing himself as a surgeon in one of the great hospitals and professor in a physiomedical college of one of our leading cities and medical centers, has recently given to a metropolitan journal an article nearly two columns long in condemnation of bathing, especially in the winter time. According to him a bath is a perilous thing. It is a custom of an innervating civilization, the natural man gets along without it—the more bath tubs and hot water the weaker the race. We can admit that the habitually unbathed individual is stronger in a sense and to some senses, but our author goes farther and claims that with every hot or cold bath in cold weather we invite pneumonia; that only the excretion loaded cuticle can give the proper protection. He has learned, he says, from actual experiment, on himself and others, that the skin does not need bathing to be clean. Dressing to suit the weather and changing underclothing sufficiently often is all that is needed. Perspiration is also apparently considered as an abnormal symptom, or rather as a bad habit that we must learn how to prevent. To refrain from baths and avoid perspiration are the important rules of hygiene inculcated by the reformer. The conventional hobo best fills the bill, and is therefore, as we may reasonably assume, to be taken as the nearest to the ideal of personal hygiene in actual practice. It would be pleasing to learn how this surgeon manages in his surgical work, or does he find in the abnormal conditions there occurring reason for temporarily abandoning his principles? It is to be hoped he does.

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[1] See General News column, p. 922.

EDUCATION AND INSANITY.

Some of the newspapers in this country have picked up a press report of the recent utterances of a French physician that seek to establish a correlation between the increase of insanity and the spread of popular education. This is not a new idea; it has long been held that much of the increase of insanity is due to the increasing complexity in modern life and the educational demands are only the attempt to meet the changed conditions. It is not education that increases insanity; it is the condition that needs education as its antidote. The old saying that a little knowledge is a dangerous thing is true enough, and a misused knowledge of reading devoted only to ephemeral and morbid publications, the dime novel and the yellow press does not conduce to the best mental health. This, however, hardly comes under the head of education, and it is a question whether the environments of modern civilization bear harder on the absolutely uneducated or the partially or imperfectly educated. There are a good many elements in the question to be considered, and judging from the effects of contact with civilization on savage or inferior races it would seem possible that even a very little tincture of modern culture would be, in its way, a safeguard. There is much truly said of the evil effects of overstrain in mental training, but that is an avoidable error and its results are not probably chargeable against education in general. There is little doubt that our modern civilization is hard on certain weaklings who would have been better off in some respects as regards their mental health if they had lived a hundred years ago, and to this fact is perhaps to be attributed considerable of the increase of insanity of the present day. It is a mistake, however, to credit any considerable part of this to education; it is an example of the fallacy of confounding the cure with the cause, which in one way or another we, as physicians, not infrequently meet. Education does not necessarily lead to happiness—it adds to our responsibilities and anxieties—and, as the preacher says, "with much wisdom there is much grief, and he that increaseth knowledge increaseth sorrow"; but, after all, wisdom is the principal thing and the complete bliss of ignorance, were it desirable, is at the present time beyond the reach of even the poorest.

Anesthesia and Alcoholics.—In operations on alcoholic subjects it is often wise to give them a drink of spirits an hour or less before its performance. These people are more restless than others and often require a greater quantity of the anesthetic to abolish sensibility, but long deprivation of drink only tends to intensify those unfavorable tendencies.—*Inter. Jour. of Surg.*

Medical News.

CONNECTICUT.

Personal.—Dr. Joseph A. Cooke, Meriden, is completing his European trip by journeying through England and Ireland.

Physician Forfeits Bond.—Dr. Patrick J. Callaghan, Waterbury, charged with illegal practice of medicine, failed to appear when his case was called, September 23, and his bond of $300 was forfeited.

Cancer Doctor Acquitted.—In the case of A. Stanley Maine, a cancer doctor of Hampton, charged with violation of the medical practice act of 1893, the jury, after an hour's deliberation, returned a verdict of "Not guilty."

Yale Clinical Building Opened.—The new clinical building for Yale Medical School, given by Mrs. Thomas G. Bennett of New Haven as a memorial to her mother, the late Mrs. Jane Winchester of Prospect Hill, was opened at the opening of the college year. It represents an outlay of $110,000.

August Mortality.—During August 1348 deaths were reported, 46 less than the previous month, 38 more than in August, 1901, and 46 less than the August average for five years. The death-rate was 17.8 per 1000 per annum. The deaths from infectious diseases were 503, or 37.3 per cent. of the total mortality.

DISTRICT OF COLUMBIA.

Personal.—Dr. George N. Kober, Washington, has accepted the appointment as a member of the consulting board of the Washington Asylum Hospital.

College Opens.—The session of the medical department of the National University, Washington, was opened, October 6, with a lecture by Dr. D. Olin Leech.

Blacklist Redivivus.—Washington physicians have inaugurated another effort to protect themselves against non-paying patients. Ten years ago a similar organization was started but was short-lived. The new association known as the "Doctor's Protective League" proposes to provide each member with a list of unwilling payers, and also to formulate a fee-bill.

Interne Dismissed for Striking Patient.—Dr. D. T. Stuart, resident physician at the Emergency Hospital, Washington, was dismissed, September 24, by Dr. H. L. E. Johnson, executive officer of the institution. The reason for this action was that Dr. Stuart had struck a patient attempting suicide, who had caught the physician's finger between his teeth and was biting it. Dr. Stuart admitted the charge, but said he considered that the circumstances justified his act.

ILLINOIS.

Smallpox has been reported to the Illinois State Board of Health during the past week from seven places in six counties.

Personal.—Dr. Samuel M. Wylie, Paxton, has returned from his trip to Russia, Egypt and the Holy Land.——Dr. James H. Finch has returned to Champaign after a summer abroad.——Dr. Charles B. Taylor has entered on his duties as assistant superintendent of the Illinois Asylum for Feeble-Minded Children, Lincoln.

Chicago.

Twenty Students Graduated.—At the convocation of the summer class of the medical department of the University of Chicago, October 2, twenty students were graduated. Dr. Norman Bridge delivered the doctorate address.

Physician Exonerated.—Dr. Mark T. Goldstine, who was held pending the investigation by the coroner's jury of the death of a patient in the office of the physician, was exonerated of all blame in connection with the man's death.

Typhoid Deaths.—Only twenty-two typhoid fever deaths were reported during the week—the fewest in any week since that ended August 2. In that week 16 such deaths were reported—a sudden increase from a weekly average of 8 during the month of July. For the successive weeks following that of August 2 the reported deaths were 28, 45, 53, 51, 55, 43, 38, 28 and 22 respectively.

Diphtheria on the Increase.—During the week the Health Department laboratory received an increase of requests for cultures, of which a majority have been diphtheria. Physicians report that the diphtheria is of the malignant, lymphatic type, the child often not complaining at all of a sore throat, and the first cultures frequently fail to reveal the typical diphtheria bacillus. Physicians should be on their guard against the form of the disease.

To Vote on Additions to County Institutions.—The county board has decided to submit to the voters at the election next month, a proposition to issue $500,000 in bonds, of which $350,000 is to be devoted to the remodeling of the insane asylum and hospital at Dunning, erecting additions thereto and also constructing a group of cottages for consumptives, and $125,000 for the erection of a ward for epileptics, a ward for contagious diseases and a ward for alcoholic cases at the County Hospital.

Personal.—Dr. Clara Ferguson, formerly of the staff of the county institutions, Dunning, has returned from a year of study in Vienna, and is now at her home in Tipton, Iowa.——Dr. Jacob Frank has been elected president and Drs. Berthold Pirosh, and Theodore B. Sachs, vice-presidents of the medical staff of the Orthodox Jewish Home for the Aged.——Dr. Harry E. Clyde has been appointed junior professor of surgery in the Illinois Medical College.——Drs. Franklin H. Martin and Thomas E. Roberts have been elected medical directors of the Mutual Life Insurance Company of Illinois.

The Week's Mortality.—The total deaths reported for the week ended October 4, 471, are 25 more than for the previous week and 52 more than for the corresponding week last year. This is equivalent to an annual death-rate of 13.48 per 1000. The increase is due chiefly to the effects of the unfavorable weather on chronic invalids; the deaths of those over 60 years of age are nearly 10 per cent. greater than the week before and one-third greater than a year ago. Deaths from violence also account, in part, for the increase—44 during the week, 29 the week before and 32 in the first week of last October.

Medical Colleges Open.—The opening of Northwestern University Medical School began with a reception to the older medical teachers, October 7, followed by an address by Dr. Henry Gradle on "A Glimpse into the Future of Medicine." The registration thus far is larger than in any previous year. Dr. F. Robert Zeit takes the chair of pathology for the year, vice Dr. A. P. Ohlmacher, resigned. The medical department of Rush Medical College, affiliated with the University of Chicago, opened October 1. The number of new students was cut down materially because of a new rule requiring one year's credit in college work for admission.

Presbyterian Hospital Affairs.—A few weeks ago a death by misadventure occurred at the hospital, from an overdose of strychnin, the blame for which was placed on an undergraduate nurse, who was forthwith discharged, with her professional career blighted. The evidence given at the inquest was so unsatisfactory and the attitude of the superintendent to the coroner's physician so inimical that the jury censured the management for not reporting the death to the coroner's office, for leaving poisonous medicines where untrained nurses had free access to them, and for employing as pharmacist a non-registered pharmacist. The attention of the State Board of Health having been called to this matter, an investigation was made, as a result of which the superintendent promised that in future medicines should be given out only on prescriptions of regularly practicing physicians, individual prescriptions being made for each patient; that nurses are to mix no medicines, which are to be furnished them in the form of separate doses and that drugs are to be kept and dispensed by a licensed pharmacist. Various changes have been suggested, among them the establishment of a separate training school for nurses, but thus far no definite information is at hand. It has also been rumored that the medical superintendent might be replaced.

INDIANA.

Personal.—Dr. William Stemen, Fort Wayne, who returned from the Philippine Islands two years ago, will locate in Colorado Springs.

The Physicians' Defense Company of Fort Wayne has been licensed to transact business in Missouri. The company guarantees to protect its members from all prosecutions for malpractice.

Grave-Robbing Scandal.—The daily press of Indianapolis has been filled with harrowing stories about the wholesale robbery of graves in the cemeteries around Indianapolis, to furnish anatomic material for the medical colleges of the city. Six demonstrators of anatomy are at present under bonds and seven colored men who are said to have been the actual grave robbers are under arrest. We have as yet received no authoritative information regarding the matter.

Central College Opens.—The Central College of Physicians, Indianapolis, opened for the year October 2. In a week the new college building on Senate Street will be ready for occupancy. The chair formerly held by the late Dr. Joseph Eastman will be filled by Drs. Thomas B. Eastman and Thomas B. Noble. Prof. Lotz of Shortridge high school will take the place of Prof. G. Benton as professor of chemistry. Dr. Louis Burckhardt, professor of physiology, will succeed Dr. John T. Scott as professor of obstetrics.

Medical Practice Act Upheld.—By unanimous decision of the Indiana Supreme Court, October 7, the law of 1901 defining the practice of medicine was declared constitutional, and the powers of the courts to enforce it against all persons who attempt to practice without a license was fully sustained. The case came up from Lawrence County, where Prof. George Parks was arrested for practicing without a license, having treated a boy who is a cripple by what is known as "magnetic healing." The court upholds only reputable schools of medicine, and decides against the practice of "christian science" or healing by faith. The State Board of Examination and Registration will proceed at once against that class under the decision. A full report of the decision will appear in our medicolegal department.

MARYLAND.

Typhoid at Warwick.—Dr. Howard Bratton, health officer of Elkton, accompanied by State Inspector Mitten of Baltimore, has made an investigation of the typhoid epidemic in Warwich, Cecil County, where 14 cases are reported, and one death has occurred.

Baltimore.

Pasteur Institute.—There are 18 patients now under treatment at the Pasteur Institute of the City Hospital. This is the largest number yet under treatment at one time.

Colleges.—The introductory lecture at Baltimore University School of Medicine was delivered September 30, on the subject "Something New," by Prof. J. W. C. Cuddy.——The vacancies in the chairs of surgery and therapeutics at the Woman's Medical College have been filled by Drs. Pearce Kintzing and L. Gibbons Smart, respectively.

Death and Disease.—The deaths for the week ended October 4 were 166, being an annual death rate per 1000 of 15.55. There were 19 deaths from consumption, 11 from typhoid fever, and 4 each from pneumonia and diphtheria. Of typhoid fever 56 new cases were reported. A few cases were also reported of measles, scarlet fever, mumps and whooping cough.

Heating the Quarantine Hospital.—Dr. Sidney O. Heiskell, city quarantine physician, proposes to overcome the difficulties of heating the Quarantine Hospital, consequent on the scarcity of anthracite coal, by running the pipes from the steam disinfecting plant over to the hospital. This plant burns soft coal, which is likely to be abundantly available.

Changes at Bayview.—At the Bayview Asylum the following changes have been made in the medical staff. Dr. Irving J. Spear, resident physician of the insane department, has resigned, and Drs. C. D. Gruver and P. L. Travers, assistant resident physicians, have resigned to begin private practice. Drs. Samuel Lee Magness and Robert Baker Lawson have been appointed assistant resident physicians.

Personal.—Dr. Henry W. Cook has returned from Canada and resumed his duties at Johns Hopkins Hospital.——Dr. Frank G. Mayer has returned from a visit to the Yellowstone Park and the Pacific Coast.——Dr. M. H. Carter has gone on a trip to California, Salt Lake City and other points in the West.——Dr. Howard A. Kelly has returned from his vacation, part of which was spent in moose hunting in New Brunswick.——Dr. Harry Friedenwald has been elected professor of diseases of the eye and ear in the College of Physicians and Surgeons, succeeding his father, the late Dr. Aaron Friedenwald.——Dr. William F. Pentz has been appointed deputy collector of internal revenue of Baltimore.——Dr. William Lee Howard has returned from a five months' cruise in his schooner yacht. Most of this time was spent off the coast of Newfoundland and Labrador.

MINNESOTA.

Personal.—Dr. George R. Curran, Worthington, has returned after a year of study abroad and will locate in Mankato.

To Found Convalescent Hospital.—A deed was filed at Marshall, October 2, whereby John M. Burke conveys to the Winfield-Masterson-Burke relief foundation $4,000,000 worth of real and personal property, to be used as an endowment for a hospital for convalescents.

Hospital Opened.—The new St. Luke's Hospital, Duluth, was opened for inspecion by the public, September 30, and patients were transferred from the old building on the following day. The new building has 28 private rooms in addition to the wards, and will accommodate 75 patients. The building and site have cost $100,000.

College Opens.—The College of Medicine and Surgery of the University of Minnesota opened for the season, September 22, with a lecture by Dr. John W. Bell, on "The Study of Internal Medicine." The registration this year will probably not be as large as last year. The old men are returning in good numbers, but the freshman class will probably be smaller than usual. This is due to the fact that one year's work in the academic course is required this year.

Bacteriologist Ill with Glanders.—Dr. Orianna McDaniel, assistant bacteriologist in the State Board of Health Laboratory at the University of Minneapolis, is suffering from glanders, contracted while she was engaged in bacteriologic investigation at the laboratory on June 30. Being given prompt attention she made an apparently complete recovery, but recently a relapse occurred, and the general condition is now far from satisfactory, though the medical attendants are in doubt whether the present illness is altogether chargeable to the original trouble.

NEW YORK.

Tuberculosis Hospital Contracts Awarded.—The state tuberculosis hospital commission has awarded the contracts for the hospital at Raybrook, Essex County, near Saranac, at a price of $54.880.

Buffalo.

Colon Bacilli in Niagara River.—The city bacteriologist, Dr. Bissell, reports having found bacilli of the colon group in the Niagara river water supply. As this is indicative of sewage contamination Health Commissioner Green again advises the boiling and filtration of all water.

Personal.—Dr. and Mrs. Matthew D. Mann have returned from Europe.——Dr. and Mrs. Herman Mynter have returned from a trip abroad.——Drs. Edward J. Meyer, Henry C. Buswell, John Mesmer and James Whitwell have returned from a fishing excursion in Northern Canada.——Dr. Alexander McNeil Blain has returned from Europe.

Anti-Tuberculosis Crusade.—The Buffalo Anti-Tuberculosis Society, under the chairmanship of Dr. Benjamin G. Long, recently met and strongly endorsed the health commissioner for sending to all tuberculosis cases the instructions for their care and methods of disinfection for the sick room and for houses after the death of such patients. Churches and societies are again asked to invite any of the corps of speakers to address them on the nature and prophylaxis of tuberculosis. Last season many of the larger societies and orders were addressed, and much interest was shown by the lay hearers in the subject discussed.

Hospital Wins Suit.—The Buffalo Hospital of the Sisters of Charity is defendant in an action for $10,000 damages brought by Lena Duman as administratrix of the estate of Frank Duman who died at the hospital in August, 1901. It is claimed by the widow that Duman went to the hospital to be treated for delirium tremens and engaged board and treatment for $7 per week. She says that he was given a room on the second floor, and that owing to lack of attention he was allowed to jump out of a window, August 15, and fell thirty feet, sustaining injuries which were fatal. The hospital authorities admitted in answer to the charges that Duman fell thirty feet, but deny the other allegations of the plaintiff, and the court sustained the hospital authorities and non-suited the plaintiff, who will appeal.

New York City.

Bequest to Hospital.—By the will of the late Samuel D. Babcock, $20,000 is bequeathed to St. Luke's Hospital.

Site for Rockefeller Institute.—It is announced that by the sale of a building at the corner of Madison Avenue and Forty-second Street to Dr. Andrew H. Smith and Davison H. Smith for $250,000, another portion has been added to the site on which the Rockefeller Institute for Medical Research is to be erected.

Police Patent Medicine Testimonials Rebuked.—Fifteen policemen attached to various precincts have been ordered to appear for trial at police headquarters on charges of "attempts to influence the public." The charges grew out of advertisements in which appear photographs of 15 policemen accompanied by as many letters setting forth the alleged beneficial effects of a certain nostrum.

Scurvy on In-Coming Ship.—A British ship reached this port after a voyage of 197 days from Japan. The great length of the voyage was attributed to the foul bottom of the ship, long calms and baffling winds. The regulation supply of lime-juice gave out when the voyage was only half completed, and on reaching this port seven of the men were in their bunks helplessly ill with scurvy, while many others of the crew were afflicted with that temporary form of evening blindness known familiarly on the tropical seas as "moon blink."

OHIO.

Entire Hospital Staff Resigns.—It is announced in the daily press that the staff of physicians, thirty-two in number, of the Toledo Hospital, resigned in a body because the board refused to dismiss the superintendent, Miss Kent.

Fugitive Captured.—Dr. John C. Modrack, Marion, who for the last six months has been a fugitive from justice, under an indictment for an attempted criminal operation which resulted in the death of Miss Laura E. Hite, was arrested in Chicago September 9.

College Openings.—The medical department of Western Reserve University opened without formal ceremonies, October 1.——Toledo Medical College opened its twenty-third annual session September 25. The opening address was by Dr. Albert L. Steinfeld, on "Recent Advances in Medicine."

Personal.—Dr. Ezekiel M. Foster, Portsmouth, with his wife and daughter, sailed, October 7, for Europe, where Dr. Foster will spend a year in study and research.——Dr. W. C. Ellis, Sardinia, will take charge of the practice of Dr. Foster of Portsmouth during the absence of the latter in Europe.

Acquitted on Bribery Charge.—Dr. Frank W. Daykin, Cleveland, who has been on trial charged with having given Councilman Charles A. Kohl $2000 as a payment on a $5000 bribe for his vote on a natural gas ordinance, was declared not guilty of the charge by a jury in the Criminal Court, October 7.

Youngstown Quarantines Against Cleveland and Pittsburg.—The Youngstown board of health has practically established a quarantine against Cleveland and Pittsburg on account of smallpox there. A resolution was passed by the board asking citizens to refrain from visiting either city except on business.

PENNSYLVANIA.

Philadelphia.

A home for convalescent children is to be erected at Gynedd by Mrs. H. P. McKean and Mrs. F. E. Bond of Philadelphia.

New Hospital Buildings Nearly Completed.—The new buildings for the Children's Hospital and for the Hospital for Diseases of the Skin, departments of the Philadelphia Hospital, are nearing completion; but for lack of heating facilities neither these nor the Maternity Hospital building, recently completed, can at present be used. The Department of Charities has applied to councils for $25,000 for heating plants.

Personal.—Dr. and Mrs. J. William White recently returned from a four months' trip to Europe, during which they visited Sir Frederick and Lady Treves.——Dr. Horatio C. Wood, professor of therapeutics and materia medica of the University of Pennsylvania, lately returned from Europe after an absence of nearly a year.——Dr. George A. Pfahler, for several years assistant chief resident physician of the Philadelphia Hospital, has voluntarily resigned the position. No one has yet been elected to fill the place, although there are many applicants.——Dr. Woody, of the Municipal Hospital, and Dr. Ralph Coombs, of the Kensington Hospital for Women, are the two new members of the staff of the German Hospital.

The free hospital for poor consumptives, which has a sanatorium at White Haven, Pa., is planning to do more active work in Philadelphia against the disease. An effort is to be made especially to secure systematic registration of consumptives, thus giving opportunity for help to such patients for the protection of themselves, their families and the public: also to protect against contaminated houses. It is the purpose also to establish clinics solely for the treatment of phthisis, and to distribute pamphlets, particularly in the slums, stating the causes of the disease and explaining the methods of precaution against its contagion. Effort will be made to carry the movement throughout the state. An aid to the cause is the recent gift by Mrs. Thos. L. Kane of a house on the summit of the Alleghany Mountains at Kane, Pa., to be used by the Summit Hospital of that place for the care of consumptives.

Medical College Year Begins.—On October 1 the se[illegible] eighth session of Jefferson Medical College was opened [illegible] an address by Hon. William Potter, president of the Board of Trustees, and an introductory lecture by Dr. Henry C. Chapman. The enrolment of students was announced as about 750.——On the same evening the Medico-Chirurgical College held its opening exercises. Introductory addresses were made by Dr. F. Savary Pearce and by Dr. Seneca Egbert, dean. The new dispensary and laboratory building has cost more than $150,000. It is of steel and brick-arch fire-proof construction, five stories high. The first floor is devoted to the medical, surgical and dental dispensaries of the hospital. On the second floor are the dental school and prosthetic laboratory, and on the third, fourth and fifth floors, respectively, are the chemical laboratory, the pathologic and bacteriologic laboratories and the histologic laboratory and dissecting room. Each laboratory is furnished with individual apparatus for from 50 to 100 students.

Pittsburg.

West Penn Medical Opens.—The medical department of the Western Pennsylvania University began its new year October 1 with a freshman class of nearly 200.

Addition to Hospital.—A contract for the erection of an operating room, as an improvement to the Reineman Maternity Hospital, has been awarded. The addition is to be of brick and will cost about $5000.

Efficiency of Vaccination.—All pupils attending public, parochial or private schools are again to be examined by representatives of the Bureau of Health to ascertain the efficiency of their vaccinations, or to be vaccinated if not already protected.

Bill for Emergency Hospital.—At the request of a number of Pittsburg's physicians a bill will be introduced into the legislature to provide for an Emergency Hospital. The purpose of such a hospital is particularly to care promptly for the many accident cases happening in Pittsburg and its vicinity.

GENERAL.

Col. Smart Goes to the Philippines.—Col. Asst.-Surg.-Gen. Charles Smart, U. S. A., has been ordered to the Philippines as chief surgeon and leaves shortly for the islands.

Cholera Worse in Iloilo.—The conditions in the province of Iloilo, island of Panay, P. I., are reported so serious from the epidemic of cholera that towns are being deserted and ordinary sanitary measures are impossible.

Dr. Lippitt Retired.—Surgeon Thomas McC. Lippitt, U. S. N., has been placed on the retired list on account of physical disabilities incurred in the line of duty. Dr. Lippitt has been in the navy since June, 1898, having been appointed from Virginia. He was surgeon of the gallant band of marines which helped to guard the legations in Pekin during the Boxer troubles, and was advanced in grade in recognition of his efficient services in that campaign.

Dr. Adolph Lorenz, professor of orthopedic surgery in the University of Vienna, Austria, who comes this week to Chicago on a professional errand, has a world-wide reputation as one of the greatest authorities in his specialty. Beginning his professional career as assistant in the surgical clinic of Professor Albert, he was obliged to give up general surgery on account of an intractable eczema of the hands caused by the antiseptic solutions in constant use in the clinic. Influenced by his chief, who had given considerable attention to scoliosis, he turned to orthopedics and first became more generally known by his prosecution and completion of the studies begun by Professor Albert, on this same subject. Professor Lorenz is best known as the author of a method of bloodless reduction of congenital hip dislocation—to treat a case of which is his present errand. Few perhaps know that before he developed this treatment he practiced the cutting method of Hoffa and added important details to its technic. Besides these better-known works he has contributed to other orthopedic problems and devised a number of deformity apparatus.

CANADA.

Typhoid at Winnipeg on the Increase.—The Winnipeg General Hospital is at present crowded with typhoid patients, many of whom come from outside points.

The Toronto Orthopedic Hospital was opened October 5. Dr. B. E. McKenzie and Dr. H. P. H. Galloway will be the surgeons in charge. The hospital has at present thirty inmates. The building and equipment cost $40,000.

Personal.—Dr. James Bruce, who has been a house physician in the Montreal General Hospital, has gone to Sydney, C. B., to practice. Dr. Bruce graduated with honors at McGill in June, 1901, being first honor man and final prize man in medicine.

Appointments.—Dr. L. W. May, a recent graduate of McGill University, has been appointed medical officer of the new Infectious Diseases Hospital at Ottawa.——Dr. W. H. Cullen, another recent graduate of McGill, has been appointed clinical assistant in the Manhattan State Hospital, Ward's Island, New York.

Montreal General Hospital.—The Montreal General Hospital report for September shows that during that month 236 patients were admitted into the wards, 214 were discharged, and there were 17 deaths. The average daily sick in residence was 179, the highest on any one day being 193. The out-door consultations numbered 2664.

Action for Fee.—Three thousand dollars for medical services is asked by Dr. A. Marien, Montreal, in an action begun against Mr. A. A. Lussier, Varennes, Que., who was shot and seriously wounded last April by his son. Dr. Marien says that he attended the patient for over a fortnight, and had to have a substitute to deliver his lectures at Laval University. The account is contested and an offer of $1000 has been made.

College Re-openings.—The opening lecture at Trinity Medical College was delivered by Dr. George A. Bingham, professor of applied anatomy, September 24, who contrasted the lives of the scientific man, Sir James Simpson, and a contemporary, a London quack of considerable repute, drawing deductions therefrom. The opening lecture at Toronto University in the medical department, was delivered, October 2, by Dr. J. J. McKenzie, professor of pathology, who dealt with the life and work of the celebrated German pathologist, Virchow. Both colleges have their usual quota of freshmen.

Diseased Immigrants.—The recent charges in a New York paper that there were associations in Canadian cities for the purpose of smuggling diseased immigrants and Chinese into the United States, has brought up in Montreal, again, the whole question of allowing diseased immigrants into Canada and of the permitting of their being dumped into Montreal when rejected by the immigration official of the United States, located in that city. It will probably be the means of opening the eyes of the Dominion government to the fact that they had better follow in the footsteps of the American government rather than permit these undesirable people landing at Canadian ports and gaining access to the country without having passed through a rigorous medical examination. Montreal is calling on the Canadian government to protect her from the influx of contagiously-diseased aliens.

Quebec's Medical Board and the Increased Standard.—McGill is particularly wrathy over the proposed new regulations of the Provincial Medical Board with regard to the admission of candidates to the study of medicine in that province. Dr. E. P. Lachapelle, so loud has been the clamor in the lay press, has had, as president of the board, to issue a letter of explanation with regard thereto. The matter first came up a year ago when Dr. Brophy, of the board, proposed that the privilege of studying medicine should be accorded only to B. A.'s. Explaining the requirement of a "Cours classique complet," Dr. Lachapelle says that it is for the French people, and whatever the English consider an equivalent will be accepted from them. The chief object is to stop the system by which boys are stuffed for examinations. In an interview accorded the lay press, Dr. Ruttan, late registrar of the medical faculty, and now professor of chemistry, states, in view of McGill's combined arts and medical course of six years, that the endorsement of the resolution of the Provincial Medical Board by the legislature would inflict needless hardships on students. In McGill circles it is felt that the resolution was adopted with a view of preventing the working of Dr. Roddick's bill for a Dominion Medical Council in the province of Quebec. Dr. Ruttan states that the English universities in Quebec will vigorously oppose the adoption by the legislature of any such measure.

FOREIGN.

Passow Called to Berlin.—Prof. A. Passow of Heidelberg has been appointed to the chair of otology at Berlin left vacant by Trautmann's death.

Americans to Erect English Army Building.—The new building for the army medical department, to be erected at Woolwich, Eng., is to cost $15,000. The contract has been given to a Pittsburg company.

Argentina Quarantines Against Rio Janeiro.—The Argentine government has decided to impose quarantine on all vessels arriving at Argentine ports from Rio Janeiro, Brazil. This action is taken because of the appearance of several cases of plague in the Brazilian city.

Unethical Ads. in the Daily Press.—A new daily paper, *Die Zeit*, has been founded in Vienna, and the managers announce that no advertisements will be received that conflict with medical standards. They have appealed to the local Medical Chamber for guidance in the matter.

Public Course of Instruction in Disinfection.—The authorities at Breslau have organized a free course of instruction in measures for disinfection. It is held at the University Institute of Hygiene and on completion of the six-day course of lectures the candidates pass an examination before the director of the institute and the chief of the city disinfection bureau. They then receive a certificate. The course is proving so popular and so useful that other universities are planning a similar innovation, and many towns without official institutes.

Campaign Against Charlatans in Germany.—The Medical Chamber at Berlin recently secured the condemnation of a charlatan in another town for unwarranted claims in his advertisements. He published among others a certain signed testimonial from a person cured of pulmonary tuberculosis in four months by his remedies. The case was investigated by a committee from the chamber, and the claims shown to be false. The affection was an apical catarrh and had not been entirely cured, while the statements in regard to previous medical treatment were false. A fine of about $75 was imposed.

Virchow as a Historian and Philologist.—*Janus* publishes a list of 72 works on subjects connected with the history of medicine that Virchow contributed to literature. He used to say that his *Archiv* contained more historical works than any other medical journal, and in fact was for years their only refuge. He was always interested in the science of language, and his article on medical terminology, published in the *Berliner klin. Wochenschrift* in 1875, is a classic, applicable to all times and sciences. He traced his name to a small village and lake in Pomerania, both called Virchow. It is probably of Slavonic derivation.

Convalescent Homes in France.—France has had these institutions since 1650, but Germany has only recently recognized their importance and introduced them. The two near Paris are the Vincennes, with 460 beds and 84,000 inmates in the course of the year, and the one at Vesinet with 330 beds and 64,000 inmates. There are also two smaller ones at Roche Guyon and Garches. They are all part of the general public hospital system, the "Assistance Publique." Six other cities have similar establishments, and there are a number of private ones. The French seem to consider that the care of the sick poor should be extended to the regaining of the working capacity. A circular has recently been issued by the authorities enjoining this point of view on the hospitals and physicians employed to look after the sick poor. The large country hospitals are to provide a convalescent home and the smaller ones to set apart a ward for the purpose. The expense is to be shared by the local and national boards as soon as the necessary legislation is completed.

Cuba's Health Good.—There is no lapse in the reforms and sanitary improvements which the United States provisional government over Cuba established. Dr. Charles Finlay, the new sanitary officer of Havana, reports the mortality rate of that city for August to be the smallest since April. There was decreased mortality, Dr. Finlay says, "in almost every group of diseases which are amenable to sanitary improvements." The most important and interesting passage in the report is that with which it concludes. It runs as follows:

> Havana, and, so far as we have been able to ascertain, the rest of the island, have continued free from yellow fever and from smallpox, though a fatal case of the former disease came on the steamship *Vigilancia* from Vera Cruz on the 4th of August and died at Las Animas Hospital on the 7th. The success which has so far attended our efforts to prevent the propagation of the disease during the conveyance of patients from vessels in the harbor or from the immigration camp at Triscornia to Las Animas Hospital, as well as during their detention at that hospital, in this season of the year, is not only highly satisfactory to us as showing that our vigilance has not abated since the inauguration of the Cuban Republic, but also as an additional demonstration of the fact that in order to attain that result all that is needed is to guard the patient from being bitten by mosquitoes.

For all this the United States can take some credit, for, though Dr. Finlay has been a resident of Havana for many years, he was born and educated in this country.

LONDON LETTER.

Finger Prints as Evidence.

In the case of a man charged with burglary finger prints were given in evidence. This is the first occasion on which this system of identification has been used in the courts of justice in this country, although it has been employed on a large scale for identifying habitual criminals in India. In this case the person committing the burglary had left the print of his fingers and left thumb on the newly-painted window-sills. An expert took photographs of those prints, and on examining the finger-prints in the possession of the police he came to the conclusion that the prisoner was concerned in the burglary. The jury, who examined the photographs with much interest, found the prisoner guilty, and he was sentenced to seven years' penal servitude.

Death Following a Mosquito Bite.

A man aged 43, a gatekeeper in the service of the Hon. Artillery Company, while engaged at the company's headquarters at Finsbury, London, was bitten on the elbow by a mosquito. Considerable swelling and inflammation followed, septic pneumonia set in and death soon ensued. The coroner's jury brought in a verdict of death from septic poisoning following a mosquito bite.

Cancer Research.

At a meeting of the executive committee of the Cancer Research Fund, under the direction of the Royal Colleges of Physicians and Surgeons, it was decided to issue advertisements in the medical journals inviting applicants for the post of general superintendent of cancer investigation. The duties of the office will include: 1, the general direction of laboratory investigation: 2, the supervision of workers appointed by or receiving grants from the committee; 3, the collection of statistical, dietetic, topographical and other information; 4, the organization of a system of correspondence with home, Colonial, Indian, and foreign laboratories and workers; 5, attendance at the meetings of the executive committee or any committee appointed by them for special purposes relating to the investigation. The general superintendent may also be appointed director of the central laboratory. It was further decided that application should be made to the Colonial Office for assistance in obtaining information as to the prevalence of cancer in the various colonies of the British empire, the mode of life, food and general environment of the inhabitants of these colonies, and other circumstances that might seem to have a bearing on the question of the origin of cancer. It was also agreed that enquiries should be made as to investigations on cancer now being pursued in laboratories in the United Kingdom, and preliminary arrangements for starting laboratory work in the examination hall, Victoria embankment, were discussed. The authorities of the Cancer Hospital have entirely reorganized their pathologic department, with the view of undertaking researches of the most modern lines into the etiology and treatment of cancer. In addition to their present accommodation, a new laboratory is being fitted up with all requisite appliances for investigation, and will shortly be in working order. A pathologist is to be appointed at a salary of $1250 a year, [illegible] work at some of the many problems connected with cancer in conjunction with and under the direction of Mr. H. G. [illegible] who has been pathologist for many years to the [illegible] and who now becomes director of the laboratory.

Correspondence.

Paraffin Will Not Prevent X-Ray [illegible]

CHICAGO, [illegible]

To the Editor:—The statement has rece[illegible] several medical journals and in the lay press, [illegible] Bleyer, New York, is given as authority for [illegible] paraffin interposed between an x-ray tube [illegible] exposed will prevent x-ray burns. To test [illegible] performed the following experiment: I hav[illegible] rays daily an area the size of a quarter, [illegible] was an epithelioma the size of a little [illegible] rounding surface has been protected b[illegible] exposed has been covered each time [illegible] 1/16 inch thick. In spite of this para[illegible] a well-marked x-ray dermatitis, not [illegible] expect without the paraffin. This [illegible] x-ray burn can be produced under [illegible] assert further that the paraffin ha[illegible] preventing x-ray effects on tissues

The idea that paraffin will fur[illegible] burns is doubtless a lineal des[illegible] such burns may be prevented by vaselin, which was long since proven false. Such inaccurate statements are most mischievous. For example, the statement that *x*-ray burns could not be produced with static machines has probably been the cause of as many *x*-ray burns as any single mistake, and the same may be true of paraffin, if the impression becomes general that it will prevent burns. Operators will go ahead, relying on it for protection, and the false sense of security thus engendered is in itself a factor of great danger. Statements like the above about paraffin are likely to go unrefuted for a long time, because no one has the opportunity or takes the trouble to experimentally establish or disprove them. It is for this reason that I have thought the above experiment worthy of report.

This may not be a bad opportunity to call attention to the fact that there is absolutely no reason to believe that anything which is transparent to *x*-rays will prevent the occurrence of *x*-ray burns. For example, it is widely believed that the interposition of a layer of aluminum, particularly if it is grounded, will prevent *x*-ray dermatitis. I have in numerous cases produced *x*-ray dermatitis on surfaces which have been constantly protected by aluminum, and I have at present a guinea-pig which has a considerable *x*-ray burn that was produced through aluminum, and with the aluminum and the lead plates grounded with a water connection, so that electro-static effects were entirely excluded. I have no hesitation in asserting that I can produce an *x*-ray effect on the tissues through any substance which is not opaque to *x*-rays, whether aluminum, paraffin or what not. The only essential to the production of *x*-ray effects is that the *x*-rays themselves reach the tissues.

Yours truly, WM. ALLEN PUSEY.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

ADVERTISING HIS EQUIPMENT AND ABILITY.

A correspondent sends us a marked copy of the *Mount Ayr (Iowa) Journal,* of September 30, from which we quote the following, omitting the names:

> "We call special attention to the medical card of Dr. ——— in this paper. The Dr. has added several pieces of furniture to his office of the finest make, thus fitting his office equal to any in the state. The outfit includes a large ——— static electric machine with X-ray attachment, a ——— wall plate battery, and an ——— surgical table of the latest and most complete type made. These were added last week to his well equipped office, and hence is prepared to treat any and all diseases as successful as the physicians in the larger cities."

The exactness and completeness with which the new equipment is named are internal evidence that the editor of the *Mount Ayr Journal* had professional assistance in writing the copy, and that Dr. ——— was not surprised to find it in the paper.

THE PERCENTAGE OF PHYSICIANS IN EUROPE.

Dr. Emil Amberg, Detroit, says: "On page 849, under 'Foreign,' under 'The Percentages of Physicians in Europe,' mistakes must have been made. It *probably* reads for '10,000' inhabitants, and even then, *Vienna* or *Berlin* must be wrong, I think."

Vienna should be 1.3 instead of 13. Otherwise the whole item is as correct as was our authority—the *Wiener klinische Rundschau,* Sept. 14, 1902, page 730. The ratio is to each 1000 inhabitants.

FILES OF MEDICAL PUBLICATIONS TO BE GIVEN AWAY.

Z., of Connecticut, writes: "I have in my possession unbound files of *Medical Record,* JOURNAL A. M. A., *Therapeutic Gazette, American Journal of Obstetrics.* and other journals nearly complete; very few copies missing. These files I will cheerfully donate to any medical college, library or individual who will pay the freight on them. I will pack them and send them to depot. Most of these journals are since 1898." THE JOURNAL will send name and address on application.

State Boards of Registration.

Vermont Report.—Dr. S. W. Hammond, Rutland, secretary of the Vermont Board of Medical Censors, reports the examination held at Burlington, July 9 and 10, as follows: Number of subjects examined, 8; questions, 80; percentage required, 70; written examination; total number examined, 13; number passed, 7; failed, 6. The 7 who passed were graduates of the following colleges: Physicians and Surgeons, New York; University of Michigan; Woman's Medical College, Philadelphia; Laval University; and three from the University of Vermont. The 6 who failed were from the Dartmouth Medical College, Laval University, Baltimore Medical College, University of Vermont and two from the University of Baltimore.

Wisconsin Report.—Examinations by the Wisconsin Board of Medical Examiners were held at Madison, Wis., July 8 and 9, 1902. Percentage required to pass, 75, with no less than 60 in any one branch. Total number examined, 66; passed, 53; failed, 13. The following is a summary furnished us by Dr. Filip A. Forsbeck:

PASSED.

Candidate.	Sch. of Pract.	College.	Per-cent.
16	R.	College of Physicians and Surgeons, Chicago.	79.2
18	R.	College of Physicians and Surgeons, Chicago.	88.0
19	R.	College of Physicians and Surgeons, Chicago.	84.6
23	R.	College of Physicians and Surgeons, Chicago.	84.6
24	R.	College of Physicians and Surgeons, Chicago.	83.2
31	R.	College of Physicians and Surgeons, Chicago.	84.2
33	R.	College of Physicians and Surgeons, Chicago.	80.1
36	R.	College of Physicians and Surgeons, Chicago.	81.7
37	R.	College of Physicians and Surgeons, Chicago.	86.7
39	R.	College of Physicians and Surgeons, Chicago.	82.1
40	R.	College of Physicians and Surgeons, Chicago.	82.7
50	R.	College of Physicians and Surgeons, Chicago.	81.1
51	R.	College of Physicians and Surgeons, Chicago.	82.5
54	R.	College of Physicians and Surgeons, Chicago.	85.1
11	R.	Rush Medical College, Chicago	86.0
12	R.	Rush Medical College, Chicago	79.5
13	R.	Rush Medical College, Chicago	82.0
22	R.	Rush Medical College, Chicago	88.7
26	R.	Rush Medical College, Chicago	84.7
29	R.	Rush Medical College, Chicago	85.4
35	R.	Rush Medical College, Chicago	87.5
46	R.	Rush Medical College, Chicago	84.5
47	R.	Rush Medical College, Chicago	77.3
52	R.	Rush Medical College, Chicago	87.1
53	R.	Rush Medical College, Chicago	84.7
55	R.	Rush Medical College, Chicago	85.3
56	R.	Rush Medical College, Chicago	83.0
57	R.	Rush Medical College, Chicago	81.6
58	R.	Rush Medical College, Chicago	84.6
59	R.	Rush Medical College, Chicago	83.1
63	R.	Rush Medical College, Chicago	87.4
65	R.	Rush Medical College, Chicago	92.5
14	R.	Northwestern University, Chicago	85.4
17	R.	Northwestern University, Chicago	82.5
27	R.	Northwestern University, Chicago	79.4
30	R.	Northwestern University, Chicago	82.7
38	R	Northwestern University, Chicago	89.4
43	R.	Northwestern University, Chicago	86.5
44	R.	Northwestern University, Chicago	82.6
61	R.	Northwestern University, Chicago	89.2
2	R.	Gross Medical College, Denver	76.3
6	H.	Hahnemann Medical College, Philadelphia	87.0
41	H.	Hahnemann Medical College, Chicago	79.1
42	H.	Hahnemann Medical College, Chicago	88.1
28	H.	Chicago Homeopathic College	90.2
20	‡	University of Minnesota	83.2
21	R.	University of Pennsylvania	87.2
45	R.	University of Iowa	76.1
48	R.	University of New York	75.0
64	R.	University of Michigan	86.3
32	R.	Trinity Medical College	81.3
49	R.	Marion Sims Medical College, St. Louis	81.3
60	R	St. Louis College of Physicians and Surgeons.	79.2

FAILED.

Candidate.	Sch. of Pract.	College.	Per-cent.
1	H.	Hahnemann Medical College, Chicago	*76.6
3	O.	American School of Osteopathy	*82.0
4	O.	American School of Osteopathy	67.3
5	H.	Chicago Homeopathic Medical College	69.0
15	H	Chicago Homeopathic Medical College	72.2
7	†	College of Medicine and Surgery, Chicago	73.1
8	E.	Bennett Medical College, Chicago	*78.1
9	R.	Keokuk Medical College (Iowa)	68.4
10	‡	University of Minnesota	73.7
25	R.	Rush Medical College	*77.7
62	R.	Rush Medical College	71.6
34	R.	Marion Sims Medical College	75.1
66	R.	Chicago Medical College (N. W. Univ.)	67.2

* Conditioned. † Physio-Medical. ‡ The University of Minnesota has both regular and homeopathic schools of medicine.

New Jersey Report.—Dr. E. L. B. Godfrey, secretary of the State Board of Medical Examiners of New Jersey, *reports* the examination held at Trenton, September 16-17, as follows: Number of subjects examined in, 9; number of questions, 90; percentage required to pass, 75; written examinations; total number examined, 28; passed, 23; failed, 5.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
49	H.	Hahnemann Med. Coll., Philadelphia.	1902	75.0
51	R.	University of Vermont	1902	92.7
52	R.	Medico-Chirurgical College, Phila.	1902	80.1
53	R.	Jefferson Medical College, Phila.	1893	79.9
56	H.	Boston University School of Medicine.	1900	94.0
50	R.	Baltimore Medical College	1902	83.7

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
60	R.	Baltimore Medical College	1902	78.7
62	R.	Baltimore Medical College	1902	75.0
61	R.	Coll. of Phys. and Surgs., Baltimore	1902	89.2
63	R.	Baltimore University School of Med.	1900	75.0
64	R.	University of Turin, Italy	1899	89.1
65	R.	Woman's Medical College, Phila.	1902	92.0
66	R.	Columbian Univ., Washington, D. C.	1897	86.3
54	R.	Columbia University, New York	1901	82.3
67	R.	Columbia University, New York	1900	79.9
68	R.	Columbia University, New York	1902	87.7
69	R.	Dartmouth Medical College	1892	78.8
70	R.	University of Montpellier, France	1889	75.3
71	R.	University of Naples, Italy	1898	81.6
72	R.	University of the South	...	77.5
73	R.	Coll. of Phys. and Surgs., Baltimore	1902	85.1
75	R.	Coll. of Phys. and Surgs., Baltimore	1902	77.0
76	R.	Yale Medical School	1893	82.5

FAILED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
55	R.	Baltimore University School of Med.	1898	57.1
57	R.	Shaw University (Leonard Med. Sch.)	1902	64.8
58	R.	Jefferson Medical College, Phila.	1902	69.5
59	H.	Hahnemann Medical College, Phila.	1899	71.1
75	R.	University of Naples, Italy	1888	62.1

Beginning with the examination in June, 1903, each applicant for examination will be required to file with his application a recent photograph of himself, with autograph signature, duly attested under the seal of a notary.

In the matter of interstate reciprocity of medical license, the policy of the board in endorsing the licenses issued by other states whose examining requirements are substantially the same as those of New Jersey, provided that the applicant fully meets the academic and medical requirements of the state, is gaining favor both with the profession and with other state boards. This policy places the admission of an applicant on the basis of his personal fitness and the thoroughness of his examination, which is believed to be the fairest and the most equable method of endorsement so far devised.

Marriages.

O. A. Tooker, M.D., to Miss Myrtle Parker, both of Lansing, Mich., September 25.

James L. Niblack, M.D., to Miss May Brown, both of Lake City, Fla., September 16.

George Mosse Norton, M.D., to Miss Leila Walton, both of Savannah, Ga., October 6.

Joseph Nisbet Le Conte, M.D., to Miss Lillian King, both of Atlanta, Ga., October 8.

Edwin Wilson Rhea, M.D., to Miss Helen Macdougall, both of Oil City, Pa., September 24.

Hugh Cabot, M.D., to Miss Mary Codman Boit, both of Brookline, Mass., September 22.

Otto Floyd Rogers, M.D., to Miss Vesta Triplett, both of Bloomington, Ind., September 24.

Hugh Prescott Ross, M.D., Campbell, Minn., to Miss Claudia Cross of Champion, Minn.

Charles H. Brooke, M.D., to Miss Gertrude F. Hermann, both of Brooklyn, Md., September 24.

Leon F. Richardson, M.D., Terril, Iowa, to Miss Gertrude Shank of Fairfax, Iowa, September 24.

Halvor Holte, M.D., Crookston, Minn., to Miss Henrietta Lunde of Maplebay, Minn., September 25.

Ludwig von Muralt, M.D., Zurich, Switzerland, to Florence Hull Watson, M.D., Farnhurst, Del., October 6.

Samuel R. Cunningham, M.D., Indianapolis, to Katherine D. Johnson, M.D., of Logansport, Ind., September 22.

Leonard C. Berry, M.D., to Miss Marie Orendorf, daughter of Dr. Henry Orendorf, both of Louisville, Ky., September 20.

R. Struble Gibbs, M.D., Reswick, Shasta County, Cal., to Miss E. Florence Owen, of Warsaw, N. Y., at Sacramento, Cal., September 10.

Deaths.

John Byrne, M.D.—In the death of Dr. John Byrne at Montreux, Switzerland, on October 2, the American profession loses one of its most prominent specialists in diseases of women. He was born in Kilkeel, Ireland, in 1825, and pursued his medical studies in Belfast, Dublin, Glasgow and Edinburgh, graduating in the latter city in 1846. He then had about two years' hospital service in his native county during an epidemic of typhoid fever. In 1848 he settled in Brooklyn and was graduated from the New York Medical College in 1852. He was one of the originators of the Long Island College Hospital in 1856. He was a fellow of the New York Academy of Medicine, sometime president of the New York Obstetrical Society, president of the American Gynecological Association, member of the Kings County Medical Society and member of the American Medical Association. He was clinical professor of gynecology in the Long Island College Hospital and surgeon-in-chief to the St. Mary's Hospital for Women, Brooklyn. The cause of his death is supposed to have been melancholia following the death of five of his children from tuberculosis. At the last meeting of the International Obstetrical Congress at Rome, Italy, on September 15, he read a paper on cancer and the best methods of dealing with it.

James W. May, M.D. Cincinnati College of Medicine and Surgery, 1875, dean of the College of Physicians and Surgeons of Kansas City, Kan., professor of ophthalmology and otology, and one of the founders of that institution; a member of the Wyandotte Medical Society and president of the Kansas Medical Society, died at his home in Kansas City, Kan., after a long illness, aged 52.

William R. Kennard, M.D. University of Pennsylvania, Philadelphia, 1860, for twenty-four years a practitioner of Milam County, Texas, and a field and hospital surgeon in the Confederate service during the Civil war, died recently at his home in Rockdale, Texas, aged 68.

Edward Miller Cameron, M.D. College of Physicians and Surgeons, New York, 1853, a member of the New York State Medical Association and the Academy of Medicine, and consulting physician to Trinity Hospital, died at his home in New York City, September 28.

Maximilian Muffat, M.D. College of Physicians and Surgeons, Chicago, 1890, a practitioner of Palatine, Ill., was found dead by the roadside near that village, September 30. He was 50 years old and is supposed to have fallen or to have been thrown from his buggy.

Charles H. Boodey, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1871, a resident of Cochituate, Mass., for nearly thirty years prominent alike as a physician and a citizen, died at his home, September 30, from paralysis, after a long illness, aged 64.

Edwin E. Hunter, M.D. Ensworth Medical College, St. Joseph, Mo., 1899, late city chemist of St. Joseph, a practitioner of Sheffield, Mo., died at St. Joseph's Hospital, Kansas City, Mo., September 24, from shock following an operation for appendicitis, aged 38.

Daniel C. Malone, M.D. University of Pennsylvania, Philadelphia, 1869, a member of the Lehigh Valley Medical Association and of the Northampton County Medical Society, died at his home in South Bethlehem, Pa., September 24, from anemia, aged 58.

Edmund B. Scribner, M.D. Kentucky School of Medicine, Louisville, 1885, a prominent physician of Louisville, Ky., died at the Gray Street Infirmary in that city, September 26, from Bright's disease, after an illness of two months, aged 45.

J. L. Carnahan, M.D. Cleveland Medical College, 1874, died at his home in Pittsburg, Pa., September 8, from the result of a fall from a street car the day previous, in which he sustained a fracture of the base of the skull, aged 61.

Watson W. Archer, M.D. Geneva (N. Y.) Medical College, 1867, coroner of Ontario County, N. Y., and for thirty-five years in practice at Clifton Springs, died suddenly at his home in that place, September 25, aged 67.

Adelbert M. Corbett, M.D. Wisconsin College of Physicians and Surgeons, Milwaukee, 1896, died at his home in Marshfield, Wis., from paralysis, September 22, after an illness of five weeks, aged 35.

George J. Peters, M.D. Western Pennsylvania Medical College, Pittsburg, 1887, an esteemed practitioner of Butler, Pa., died in that city, from consumption, September 19, after an illness of a year.

Rufus H. King, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1847, the oldest practitioner of Carroll County, N. H., died at his home in Wolfeborough, September 17, aged 82.

James C. Burch, M.D. University of Maryland, Baltimore, 1862, a practitioner of Baltimore for nearly forty years, died at his home in that city, September 21, from Bright's disease, aged 64.

John J. Haptonstall, M.D. Medical College of Ohio, Cincinnati, 1896, died at his home in Stone Cliff, W. Va., September 26, from the effects of being struck by a train the previous day.

John F. Eddelman, M.D. Rush Medical College, Chicago, 1896, a practitioner of that city, died at Presbyterian Hospital, September 19, from typhoid fever, aged 46.

Seth C. Lacey, M.D. University of Michigan, Ann Arbor, 1861, died at his home in Aberdeen, S. D., September 18, after a long illness, aged 69.

Isaac G. Woolsey, M.D. Cincinnati College of Medicine and Surgery, died from heart disease at his home in Woolsey, Ga., September 11, aged 73.

John Porter Gaston, M.D. Vanderbilt University, Nashville, Tenn., 1901, died at his home near Gilbertsboro, Ala., September 20, aged 35.

Jacob Eisenstadt, M.D. Russia, 1887, a Denver physician, died recently at Redding, Cal., where he had gone on account of declining health.

James Francis Hamilton, M.D. University of Pennsylvania, Philadelphia, 1893, died at his home in Philadelphia, September 1.

John S. Shepherd, M.D. State University of Iowa, Iowa City, 1875, died at his home in Postville, Iowa, August 28, aged 76.

Arthur E. Nichols, M.D. Bellevue Hospital Medical College, 1879, died at his summer home, Charlotte, N. Y., September 28, aged 48.

Alfred L. Gaston, M.D. Vanderbilt University, Nashville, Tenn., 1891, died at his home in Marbuts, Tenn., September 23.

Job S. Coggeshall, M.D., 1874, died at his home in Ogden, Ill., September 14, from consumption, after a long illness.

Deaths Abroad.

Dr. Alcina y Rance, professor of therapeutics and materia medica in the Medical Faculty of Cadiz.——**Dr. Alexander William Michael von Hasselt**, one of the oldest medical officers of the Dutch army, aged 88.——**Dr. Josef Bergson**, formerly privat docent of internal medicine in the University of Berlin, nearly 90.——**Dr. P. Delacour**, director of the Medical School of Rennes, aged 76.——**John Climenson Day**, M.R.C.S. and L.S.A., 1846; M.D. Lond., 1884, died from lymphadenoma, August 17, aged 78.

Dr. J. Unterlugauer, who has lived at Graz since his retirement from active life in 1899. He was a medical officer in the Austrian Army until entrusted with the task of creating a sanitary organization in Bosnia and Herzegovina. As the result of his efforts these countries have now a model sanitary organization, smallpox has been exterminated and hospitals erected in every province, of which the Sarajevo national hospital is said to be a "European model institution."

Thomas Frederick Grimsdale, M.R.C.S. Eng., J.P., one of the best-known practitioners of Liverpool, died at his home in Hoylake, August 29, aged 79. He made a specialty of obstetrics and gynecology, and lectured for twenty years on these subjects in the Liverpool School of Medicine. His most notable operative achievement was the enucleation of a uterine fibroid, in 1857, one of the earliest successful cases on record.

Arthur Barry Blacker, M.R.C.S. Eng., 1884; L.R.C.P. Lond., 1886; M.D. Durham, 1890, superintendent of the *x*-ray department, St. Thomas' Hospital, London, and the Hospital for Consumption, Brompton, died, September 10, after a long illness, aged 40.

Dr. Adolfo Targioni-Tozzetti, Medical Faculty of the University of Florence, Italy, 1848, emeritus professor of comparative anatomy and the zoology of the invertebrates, in his alma mater, died at Careggi, September 18, aged 79.

George Mickley, M.A., M.B., M.E. Cantab., M.S.A., a specialist in nervous and mental disease, died at his home in Saffron Walden, August 10.

Miscellany.

Case of Naphthalin Cataract in Man.—A. Lezenius of St. Petersburg reports the first case of an actual cataract produced in man by ingestion of naphthalin, confirming the results obtained on animals. In the experiments in this line 1 gm. of naphthalin per kilogram of body weight of the animals induced a cataract formation. In the case described the patient was a pharmacist 36 years old, robust and eyesight normal. A physician prescribed for him, in 1900, naphthalin in the dose of 5 gm. to 200 gm. castor oil as he exhibited symptoms of an inflammation of the bowels. He took the whole amount in thirteen hours at one-hour intervals. He awoke next morning with pain in the bladder and found that he could scarcely see. The perinuclear cloudiness of both lenses had increased by the ninth hour until he could only count fingers at 4 feet. Reading and writing were impossible. The cloudiness has persisted unchanged, the first phase of zonular cataract. It had not been operated on at the time the article appeared in the *Klin. Monatsblatt f. Augenhk.*

Etiology and Treatment of "Tics."—H. Meige of Paris has been devoting much time and study to the essence of "tics" and their treatment. He has recently published a work of 640 pages on the subject and in an address at the French Neurologic Congress in August proclaimed the chief results of his research. He says he has established that a "tic" is a psycho-motor trouble, in which the cerebral cortex is always involved to a certain extent. In this it differs from spasms, which are merely reflex manifestations of spinal-bulbar origin. A tic must be regarded as a functional act whose irregularity and inappropriateness depend on psychic disturbances. There is, therefore, a physiologic and a psychologic factor in every tic and treatment should be guided by this fact. Attentive surveillance, training of the spasmodic act under systematic direction and repetition, with suggestion and other psychic measures, ensure gratifying results.

Book Notices.

A Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A. M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. New (3d) Edition. Enlarged and Thoroughly Revised. In One Very Handsome Octavo Volume of 756 Pages, with 474 Engravings, of Which 60 Are in Colors and 22 Colored Plates. Cloth. Price, $5.00 net. Philadelphia and New York: Lea Brothers & Co.

A new edition of a book is too often only a reprint of previous editions with just enough "revision" to eliminate error. Hence, when one picks up a new edition of a work one is prepared to find the same old book. In this instance, however, a first glance shows that Dudley has more than revised his book; he has given us so much new matter and rewritten so much of the old that it is practically a new work. Some of the chapters are entirely new, and many have been rewritten. In the matter of illustrations, there is a decided improvement. Many of these are in colors and not a few of the old black and white drawings have been discarded and replaced by new and better ones. As a rule the major and most of the minor operations are illustrated with drawings to show the technic step by step. Thus curettage is illustrated by five drawings, supravaginal hysteromyomectomy by twelve, and vaginal hysterectomy by fifteen. All of the drawings and colored plates are beautiful, but what is of most importance, they are practical and helpful to the student in that they graphically carry to the mind through the eye detail in technic that is impossible to understand and appreciate from the text. The six colored plates giving in detail the technic of vaginal hysterectomy are deserving of the highest commendation both for their artistic beauty and for their practical value. Dudley's book has always been held in high esteem both by the specialist and by the general practitioner who is compelled to do a certain amount of gynecologic work, and this edition will, we are sure, make it still more popular.

Grayson's Diseases of the Nose, Throat and Ear. A Treatise on the Diseases of the Throat, Nose and the Associated Affections of the Ear. By Charles P. Grayson, M.D., Lecturer on and Instructor in Laryngology, in the Medical Department, University of Pennsylvania. In One 8vo Volume of 549 Pages, with 129 Engravings and 8 Colored Plates. Cloth, $3.50. Philadelphia and New York: Lea Brothers & Co. 1902.

The relation of diseases of the ear to the nose and throat is so intimate that the presentation of the whole subject in a single work is very acceptable. While the work presents little that is especially new or original, at the same time it is practical and instructive. *Instead of giving the treatment of these* diseases exhaustively, the author dwells only on such treatment as he has found most satisfactory. While this enables the reader who cares to do so to follow closely in the lines recommended it is disappointing to the practitioner who is looking for helpful ideas from others. The book will be particularly valuable to the beginner who wishes a terse description. It is well printed and would be a valuable addition to the library of most practitioners.

The Medical Directory of New York, New Jersey and Connecticut. Volume IV, 1902-1903. Pp. 958. Price, $2.50. Published by the New York State Medical Association, 64 Madison Ave., New York.

To say that the last issue of the New York, New Jersey and Connecticut Directory is as good as the preceding ones is all that need be said. The general plan of arrangement is ideal, and makes reference to it easy and satisfactory. The use of different colored paper for different lists is excellent. All information in regard to medical laws, hospitals, dispensaries, medical colleges, societies and associations with lists of members as well as a large amount of other information is given. Those who have had the responsibility of getting up this directory are deserving the highest praise, and should be supported by the profession of the states covered. We hope the time will soon come when other state bodies will take up this work.

Societies.

COMING MEETINGS.

Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

Conference State and Provincial Boards of Health of North America, New Haven, Conn., Oct. 28-29, 1902.

Oklahoma Territory Medical Association, Guthrie, Nov. 11, 1902.

Southern Surgical and Gynecological Association, Cincinnati, Nov. 12-14, 1902.

Medical Society of the Missouri Valley.—In the report of the annual meeting of this society, the new secretary was given as Dr. Wood, Sioux City. Dr. Charles Wood Fassett, St. Joseph, was elected secretary of the society.

Carroll County (Ill.) Medical Society.—This society met at Mount Carroll, September 16, and elected Dr. Joseph Haller, Lanar, president; Dr. Frederick H. Snow, Chadwick, vice-president, and Dr. Henry S. Metcalf, Mount Carroll, secretary.

East Tennessee Medical Association.—This association met at Morristown, September 25, and elected Dr. William A. Applegate, Chattanooga, president; Dr. Charles J. Broyles, Johnson City, secretary, and Dr. William J. Mathews, Johnson City, treasurer.

Shiawassee County (Mich.) Medical Society.—This society was organized at Owosso September 30, with the following officers: President, Dr. Dryden H. Lamb, Owosso; vice-president, Dr. R. H. Scott, Laingsburg; and secretary, Dr. Charles Shickle, Owosso.

Harlem (N. Y.) Medical Association.—The annual election resulted in the selection of the following officers: Dr. Edward L. Cocks, president; Dr. William H. Luckett, vice-president; Dr. Percy H. Fridenberg, secretary, and Dr. Israel L. Feinberg, treasurer.

Washington County (Minn.) Medical Society.—This society was organized at Stillwater, September 24, with the following officers: Dr. Willis H. Pratt, president; Drs. E. O'Brien Freligh and Burton J. Merrill, vice-presidents, and Dr. James H. Haines, secretary and treasurer.

The Association of Hospital Superintendents of the United States and Canada.—This association will hold its fourth conference October 14, 15 and 16, in Philadelphia. Dr. Jesse T. Duryea, general medical superintendent of hospitals, Brooklyn, is president of the association.

Minnesota Academy of Medicine.—At its meeting in Minneapolis, October 1, the academy elected Dr. J. Warren Little, Minneapolis, president; Dr. William Davis, St. Paul, vice-president; and re-elected for the fourteenth time, Dr. Richard O. Beard, Minneapolis, secretary-treasurer.

Somerset County (Me.) Medical Association.—At the thirty-eighth annual meeting of this organization, held in Fairfield, September 24, Dr. Warren G. Sawyer, Madison, was elected president; Dr. John L. Pepper, Madison, vice-president, and Dr. Howard C. Taggart, Skowhegan, secretary.

McLeod County (Minn.) Medical Society.—This society perfected its organization at a meeting held in Glencoe, October 1, and elected the following officers: Dr. Kee Wakefield, Hutchinson, president; Dr. David W. Bolles, Brownton, vice-president, and Dr. Frank E. Burch, Glencoe, secretary.

Wayne County (Mich.) Medical Society.—Almost 200 physicians of Detroit and Wayne County met at Detroit, October 2, and elected the following officers of the Wayne County Medical Society: Dr. Frank B. Tibbals, president; Dr. Charles G. Jennings, vice-president, and Dr. Hugh Mulheron, secretary, all of Detroit.

Oconto County (Wis.) Medical Association.—The physicians of Oconto County met at Oconto Falls, September 25, and perfected the organization of a county association. Dr. Herman F. Ohswaldt, Oconto Falls, president; Dr. O. H. Arndt, Oconto Falls, vice-president; Dr. A. S. White, Gillet, secretary, and Dr. J. C. Grant, Lena, treasurer.

Beth Israel Hospital Alumni Association.—This society has recently been organized in New York, to promote social intercourse among its members, and to advance the science of medicine and the art of surgery, with the following officers: Dr. Abraham Hymanson, president; Dr. George S. Mills, treasurer, and Dr. Meyer Rabinovitz, secretary.

Laramie County (Wyo.) Medical Association.—This society met for organization at Cheyenne, September 27, adopted the constitution and by-laws suggested by the American Medical Association for county organizations, and elected Dr. William W. Crook, president; Dr. Amos W. Barber, vice-president; Dr. William A. Burgess, secretary, and Dr. William A. Wyman, treasurer, all of Cheyenne.

Tenth District (Mich.) Medical Society.—A meeting was held at Grayling September 22, by the registered physicians of Roscommon, Crawford, Otsego, Montmorency, Oscoda and Ogemaw counties, for the purpose of forming a district medical society. The organization was effected by the election of the following officers: President, Dr. S. N. Insley, Grayling; vice-president, Dr. William H. Witter, West Branch; secretary, Dr. Clifford C. Curnalia, Roscommon, and treasurer, Dr. H. B. Kiehle, Rose City.

Central New York Alumni Association of Albany Medical College.—The second annual meeting of this association was held in Syracuse, September 24. The following officers were elected: Dr. Charles B. Tefft, Utica, president; Drs. Thomas P. Scully, Rome, Frank L. Harter, Syracuse, Irving S. Edsall, Middleville, George P. Johnson, Mexico, Walter K. Quackenbush, Trenton, and George F. Gardner, Ellisburg, vice-presidents; Dr. Frederick H. Brewer, Utica, secretary, and Dr. Earl D. Fuller, Utica, treasurer.

St. Joseph (Mo.) Medical Society.—The regular bi-monthly meeting of the society was held September 23. The most important business transacted was the taking of the necessary steps to affiliate the local organization with the state medical association. To this end a committee was appointed to revise the local constitution and by-laws. At the meeting of the state association last May a new constitution was adopted, which made necessary a change in the local by-laws. This change, if adopted by the society, will make it eligible for membership in the state organization.

Central Tri-State Medical Society of Kentucky, West Virginia and Ohio.—This society holds its 7th quarterly meeting at Huntington, W. Va., October 16. On the program we notice "Forty Years' Changes in Surgical Science and Art," by Dr. Phineas T. Connor, Cincinnati; "The Causal Relation of Defective Eyesight to Some Morbid Nervous Phenomena," by Dr. Allen P. Banfield, Buchanan, Ky., and the exhibition of specimens and photographs by Dr. B. Merrill Ricketts, Cincinnati. At the meeting held July 17, The Journal of the American Medical Association was adopted as the official organ of the society.

International Surgical Association.—A large number of foreign surgeons who were present at the Belgian Congress of Surgery voted the organization of an international society, to be composed of the surgeons of the world. The following were appointed a committee to prepare the constitution and by-laws of the new association: Roswell Park, for the United States; Broca, for France; Sonnenburg, for Germany; Giordano, for Italy; Reginald Harrison, for England; Gussenbauer, for Austria; Bloch, for Denmark; Willems, for Belgium; Da Isla, for Spain; Djemil Pasha, for Turkey; Rotgans, for Holland; Jonnesco, for Roumania; Williaminoff, for Russia; Reverdin, for Switzerland, and Borelius, for Sweden. It is proposed to have an annual meeting of the new association.

The Belgian Congress of Surgery.—Fractures, appendicitis and surgical antisepsis and asepsis were the subjects discussed at this congress, which met at Brussels, September 8 to

10. Tuffier's address was a plea for operative intervention under radiography and asepsis for fractures of the long bones. Valraven's address on surgical antisepsis and asepsis was an interesting presentation of the practices in vogue at various clinics as learned by direct inquiry of the surgeons. About 25 different processes of sterilizing catgut were advocated by the 58 surgeons who expressed their preference for catgut; 50 who use it occasionally are satisfied with the manufacturer's disinfection. Jonnesco puts a flannel suit on the patient that extends closed beyond hands and feet; Reverdin uses a similar suit of cotton. Dry asepsis seems to be the rule where possible. Drainage is rejected completely by a large number; 74 use rubber drains; 27 Mikulicz's drains, and 13 glass tubes. Giordano and Berger apply a large dressing, extending far beyond the wound, while Roux prefers a minimal collodion dressing. Hannecart and Jacobs absolutely decline all infectious cases; Terrier, Korteweg, Bataille and Delagénière never touch a suppurating case nor even the dressings, always using the forceps. Schwartz and Mouchet take a general bath after operating on a suppurating case. Adenot emphasizes the advantage of copious sweating in the disinfection of the hands, and Letoux states that he dips his hands in ink and lets them dry as a test of the thoroughness of his disinfection afterward. The stain shows the parts overlooked in the cleansing, the particles of ink settling in the crevices like microbes. Out of 120 replies received, 54 surgeons state that they have given up the use of gloves, except perhaps rubber gloves during septic operations, but Von Eiselsberg, Tuffier and Gerster use lisle gloves for all operations and change them often. The mask is rejected by 95 surgeons, others advocating it. Rydygier and Bassini moisten face and mustache with an antiseptic solution before operating. Haegler always rinses his mouth with 50 per cent. alcohol. Some surgeons wear a waterproof apron under their blouse. Jacobs advises stripping to the skin and putting on a complete washable suit fresh from the autoclave before each important operation. Cordemans retains only his trousers under his blouse. Verhoef changes his linen before every important operation. The general trend of opinion seems to be to change the dressings as little as possible and then to handle them only with the forceps. Jonnesco has the dressings changed only in a special aseptic room, not in the ward, and a number of surgeons have a special room for preliminary disinfection. Sorel warns against the use of antiseptics which entail desquamation. Goris paints the region around the field with iodin the day before and the day of the operation. If the umbilicus is near the field, Van Stockum fills up the depression with collodion.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Sept. 4, 1902.

The President, Dr. John M. Fisher, in the Chair.

A case of endothelioma of the uterus was described by Dr. Linnæus H. Prince. This rare affection has been reported four times.

A Report of 100 Obstetrical Cases.

Dr. Edwin Rosenthal, in this paper, wished to show the average run of such cases in private practice. He placed peculiar emphasis on the nationality of the patient as being a factor in the character of labor. Of the 100 children 17 were lost. The majority of presentations were by the head; it was necessary to use the forceps 15 times. Of the instrumental deliveries 12 were males and 3 were females; thus, for every female child needing forceps delivery, 4 male children had to be so delivered. Regarding the use of forceps, a rule of the author, which he considers sufficiently elastic to suit most cases, is as follows: Any case suitable for the use of forceps should have them applied if after three hours no progress is made toward the delivery of the child. The author considered as suitable forceps cases those that can possibly be delivered with the aid of the instrument, such as occipital anterior position, right and left. The occipital posterior position, right or left, he believes always to be a debatable position, and the use of forceps should not be considered as the only method to pursue. Many of the latter positions are believed to be impossible forceps cases, and the question of podalic version or of section should always be considered. The speaker advocated the use of douches only when there is infection, and then for special purposes.

In conclusion, the necessity was emphasized of considering obstetrics as a surgical procedure, and therefore all the rules of hygiene and cleanliness should be the fundamental principle in its practice.

DISCUSSION.

Dr. John C. DaCosta—My experience with left occipital posterior position has been, that it has generally been easily converted into anterior, particularly if the forceps or one blade as a vectis is used. The most of my cases have been American women, and in these we know that the heads of the babies have been larger than those of foreigners.

I was glad to hear the Doctor speak of the disuse of douches. A long while ago I satisfied myself that douches, unless for some purulent or similar discharge, should not be used. My belief was confirmed by an article in a German paper, describing experiments in which streptococci had been implanted in vaginæ without sterilization. The streptococci were killed within an hour. The vaginæ were then sterilized and the streptococci again implanted, when it took 24 hours to kill them. This I thought was a strong argument against the douche.

I think the Doctor is rather free in the administration of ether in obstetric work. I would like to ask him what proportion of hemorrhage he has had in cases in which he has used ether. I have seen very serious results from its use. I think that Nature intended woman should have a certain amount of pain to help expulsion. We know that ether affects if it does not entirely relax the muscular tissue, and we do not want this to happen, nor to have hemorrhage.

Dr. M. M. Franklin—I wish to congratulate Dr. Rosenthal on his paper. I think the infant mortality mentioned is rather high, which is perhaps due to the foreign nationality of his patients. As an anesthetic I have never used anything but ether, and have never noticed any bad results. In some of my cases postpartum hemorrhages have occurred, but I think this would have happened no matter what anesthetic was used.

Every case of occipito-posterior presentation I have been able to deliver without section or craniotomy. Perhaps this has been due to good fortune rather than to skill, but I think with Dr. DeCosta that with patience and the use of forceps we can secure the anterior position, or deliver as a posterior presentation with, of course, more or less laceration of the maternal structures.

Dr. J. M. West—I do not altogether agree with the author concerning anesthetics. I am partial to the use of chloroform and use it almost invariably. If given carefully I believe it is the safest anesthetic we have in obstetric practice.

The question of posterior rotation of the occiput is extremely interesting, and one not always easy to settle in the best manner. I have never met with a case of rotation of the occiput posteriorly in which delivery could not be made safely by means of the forceps.

Dr. Rosenthal, in closing—In cases in which the promontory of the sacrum is a little too large, and the head is firmly fixed in the fourth position, a Cesarean section should be done. The use of the obstetric forceps in such cases should always be a debatable question. In the exceptional cases in which the uterus has been drained of its liquid contents and the head is in a posterior right or left position, I believe that if the child is alive a section is a right procedure, giving greater hope to both child and mother than a forcible instrumental delivery. But if the child be dead, then craniotomy is justifiable. If the instruments be applied in this position, and the pelvis be large enough or the head of the child small enough to be forced through, delivery can be accomplished; but at what a cost! Invariably the perineum is torn and other and greater harm may be inflicted. An anesthetic should be employed when we apply the instruments.

I know that hemorrhages sometimes follow ether, but there is some other cause than the ether. I think that postpartum hemorrhages are generally due to something left behind, though, of course, ether may sometimes produce them. I should make it a rule of practice in all cases of hemorrhages of this character to first look for the cause and then treat it. I believe we ought to use an anesthetic in all obstetric operations, but I most certainly believe it is wrong to increase our obstetrical practice by the employment of anesthetics.

SECOND INTERNATIONAL CONFERENCE FOR THE PREVENTION OF SYPHILIS AND VENEREAL DISEASES.

Held at Brussels, Belgium, Sept. 1 to 6, 1902.

(From Our Special European Correspondent.)

(Concluded from page 857.)

Arm-to-Arm Vaccination.

A spirited discussion took place regarding arm-to-arm vaccination, but it was generally conceded that animal lymph was advisable. If the state prohibited arm-to-arm vaccination, as a means of control of one of the smaller factors in the spread of syphilis, then the state should provide the necessary vaccine lymph.

Industrial Infections.

Dr. Landouzy, Paris, advocated the passage of legal measures which would recognize, as punishable, all cases of syphilis acquired by workers in industrial manufacture. The responsibility should fall on the proprietor, whose duty it should be to insist that none of his employes had the disease, or the state should have the power to inspect and enforce a healthy condition of employes when large numbers of workers are collected.

Discussion of Resolutions.

The afternoon session was devoted to the discussion of certain fixed resolutions. The greatest amount of spirit was shown in the discussion of two resolutions, one by Dr. Landouzy and the other by Dr. Neisser. The former advocated in general the abandonment of all restricted measures regarding the prostitute, and the enforcement of common laws which should settle the responsibility of communicating disease on the diseased individuals. This resolution met with the approval of a large number of the abolitionists, although it was very evident that no sound principles of modern law were in the minds of those in favor of the measure.

Dr. Neisser's proposition met with greater favor. He said that the state had the right to protect its citizens and should establish a system of sanitary control, which was a transformation of the present systems. This should not be obligatory for all, but only in so far as hygienic purposes were concerned. The majority of the members of the Congress favored this, but no unanimous conclusion could be reached. Other questions and resolutions will be presented at the end of this report.

Legal Responsibility for Transmitting Venereal Diseases.

This subject was discussed with considerable vigor by eminent jurists on the fourth day. The opinions were very various, for, while in theory the objects to be obtained were admitted by all, it was shown by those of widest experience that all measures would prove absolutely impracticable, save for isolated and flagrant cases.

Mr. Bonnvie, of the Supreme Court of Brussels, gave a most interesting contribution to the discussion. He said that from a standpoint of jurisprudence the transmission of syphilis insantium and of syphilis were two entirely different things; the one being acquired by an innocent person through the dereliction of another, the other a matter of wilful exposure to a known or unknown danger. The law should frame measures to protect the former, but it could not recognize an immoral contract as in the case of the latter, save in the event of violence or theft. The law, if invoked, should be so, not because an individual by infecting another has done wrong to that individual, but because he has wronged society as represented by the tort suffered by one of its members.

From a practical point of view, however, when such cases are taken into the civil courts, all sorts of technical difficulties, questions for medical experts, etc., arise, and as a result the small hope of obtaining damages on the one hand and the dangers of blackmail on the other make the question extremely difficult excepting in the most flagrant instances. Prostitution is not recognized by law; it can not be, and those who pursue that avocation must know its dangers. Misery and crime are largely responsible for the evil of prostitution. Remove these and this evil will largely disappear. He quoted Fournier as saying that one-fifth of all women were infected by their husbands. How can this terrible condition be remedied? By divorce? But how will this right the wrong? It will not remove syphilis from the wife, and then comes the scandal-producing process of proving the husband guilty. The women should be given a better opportunity and divorce might prove, in the hands of the man, a destructive weapon. The man with syphilis who insists on marrying because of pecuniary or social advantages should be considered by the physician as outside the ordinary moral plane. He is a criminal and his secret should not be harbored.

The dangers of venereal disease should be taken into account in all contracts for marriage, as any other defaulting factor is recognized in business contracts.

Jurists LeFoyer and Bell of Paris maintained that an infecting individual should be punished by law. His fault is a tort committed on another and should be recognized in the legal code.

D. Jadassohn, Berne, said that new laws had recently been made in Switzerland which make it a misdemeanor for a prostitute to continue her calling after a physician has notified her she has an infectious disease.

Dr. Tomasoli, professor in the University of Palermo, said that the prostitute should be legally recognized because of her intimate association with the criminal. The state control of prostitution is a legal necessity as a protection to the community.

Individual Prophylaxis.

The factors concerned in individual prophylaxis are well recognized by all and hence the discussions on this point were not extended.

Dr. Good, Paris, spoke of talks and lectures as being unsatisfactory save in hospitals or garrisons where discipline was obtainable. Placards and signs were of limited use because of the difficulties of including instruction for both sexes. Wisely written pamphlets and books, carefully distributed, were the best means of giving knowledge which was at the basis of individual prophylaxis.

Dr. Queyrat asked for the assistance of the clergy to take off the ban of secrecy concerning the discussion of sexual questions. By their efforts a more healthy tone could be induced.

M. DeMorsier advocated more biologic teaching in elementary schools, whereby the phenomena of sex will be approached rationally and impersonally and the youth will have learned from plants and lower animals the principles of reproduction.

Dr. Santoliquido urged the principle of gratuitous medical treatment as important for individual prophylaxis. In the Italian dispensaries the names of the patients are not asked and the bottles are labeled so that no suspicion will be directed to the sick person. The government spends about $200,000 a year to provide instruction in elementary sexual hygiene.

Dr. Neisser believed in the open dispensary, but thought that it should be for those only who could not afford to pay.

Other members voiced similar and other well-recognized features concerning the intellectual and moral instruction of the youth of the country.

Statistics.

Because of the technical character of the subject, this subject was but scantily noticed, being referred by Dr. Neisser to a committee. Uniformity and regularity were the attributes most desirable in order to afford comparable figures.

Recommendations of the Congress.

A number of important resolutions were not recommended to the Congress because of lack of unanimous vote, but a few minor points were presented as the vote of all. In brief, these were:

1. All recruits should be carefully instructed by an official pamphlet on the risks, dangers, etc., of venereal diseases. This pamphlet he must keep as a part of his official papers.
2. The law should guarantee free treatment to all venereal patients and should break down all restriction against the treatment of these diseases in public hospitals. Medical secrecy and modesty should be respected.

3. Moral influences should be furthered and it should be taught that chastity and continence are not only compatible with perfect health, but are highly desirable.

4. *Statistical* inquiries should have a uniform basis, should be international in character and should receive government supervision.

5. All institutions for the instruction of the young should introduce courses in the relative matters of sexual hygiene from a moral and broad point of view and there should be editorial conformity in the books and pamphlets which are issued for this purpose.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-Second Annual Meeting, held at Allentown, Sept. 16 to 18, 1902.

The President, Dr. F. P. Ball, Lock Haven, in the Chair.

(Concluded from page 858.)

Hydrotherapy in Diseases of the Heart.

Dr. Solomon Solis Cohen, Philadelphia, spoke on the relief and the cure of some cases of disease of the heart by means of application of water and of the variations of temperature that can be produced by these applications and which could be carried out by any physician in his own household. It was not necessary to send patients across the water to a particular spa, or to buy elaborate apparatus. A few feet of rubber tubing, a rubber bag, a bathtub or spigot or hose were all the apparatus necessary. With these means it was possible to diminish or retard the rate of the cardiac contractions, increase or diminish the vigor of the cardiac action. The majority of physicians were not aware that the application of Leiter's coil over the heart or the application of the ice pack is the best preventative possible of the cardiac weakness of infectious disease. Even when cardiac weakness has developed the application of cold over the pericardium is less dangerous than large doses of alcohol.

Dr. Cohen, in closing the discussion: Although it seemed rather paradoxical to speak of the internal use of water to relieve dropsy, yet in certain cases it would be found that by restricting the time of water drinking and allowing the patient to satisfy himself at intervals of four hours there would be a decided effect in increasing the urine and diminishing anasarca. The patient is allowed no fluid of any kind in the interval. The use of hypodermoclysis given very slowly will sometimes start the kidney sufficiently to carry off the anasarca. If a large quantity is introduced rapidly under the skin the result is immediate edema of the lungs and death of patient.

The Unity and Intercommunicability of Human and Bovine Tuberculosis.

Dr. Mazyck P. Ravenel, Philadelphia, showed the proof of the unity of human and bovine tuberculosis. 1. In the study of pure cultures from man and bovine animals. While certain differences may be ordinarily recognized they are due to the soil in which they have grown, and the resistance they have encountered. Cultures on artificial media lose their distinctive features gradually, and become so much alike that it is difficult to tell them apart. 2. In the action on animals, cultures from both sources produce essentially the same disease in all experimental animals. The chief difference noted is that cultures from bovine sources have a much greater pathogenic power. 3. The gross pathology of the lesions produced is essentially the same, such differences as are seen being due to the resistance of the animal rather than to any difference in the cultures. 4. The pathologic histology of the lesions is the same as shown by Schuppel, Baumgarten and others. Though this proof of unity presupposes intercommunicability the following further proofs are submitted: 1. Infection from man to animals. (*a*) By sputum from attendants, as in the cases reported by Cozette, Cliquet, Huon, etc. (*b*) By inoculation, as shown by Chauveau, Klebs, Crookshank, and others. 2. Infection from animals to man. (*a*) By inoculation, as in many reported cases. (*b*) By food, cases of which have also been reported. The author states that the two diseases are the same, caused by the same germ and are intercommunicable. Tuberculosis of cattle is therefore a menace to public health and every effort should be made to suppress and eradicate it. At the same time the greatest danger is in tubercular sputum from man. The efforts for the prevention of tuberculosis should embrace all sources of infection.

Food Adulteration.

On Wednesday evening Secretary Hamilton of the Department of Agriculture at Harrisburg delivered an address on "Food Adulteration; Its Extent and Control." The condition of food products on the markets in the state were shown by figures giving facts as disclosed by the work of the Dairy and Food Division of the Department of Agriculture for two and a half years. Of 3023 samples of butter, all were sold as butter except 103 sold as oleomargarine, and 61 sold as butterine. The analyses show that 1019 were butter, 164 renovated butter, and 1840 oleomargarine. An elaborate table is given showing samples of food analyzed under the provisions of the Pure Food Act of June 26, 1895. The responsibility for food adulteration is fixed on the manufacturer, the jobber, the retailer and the cook, and under the latter head is included the proprietor employing the cook. The careless methods used in the keeping of food are criticized. The keeping of milk in open vessels exposed to germs is common. It is suggested that if each physician in Pennsylvania would urge greater care in the preparation and preservation of food in the families of his patients the number of many troubles would be reduced and the length of life, its enjoyment and the efficiency of workers would be largely increased. The laws governing food adulteration as it affects the manufacturer, etc., should be both state and national. Heretofore this legislation has been confined to the several states, but the opinion is unanimous that a national pure food law is a necessity. The purposes of such a national law are given by the author and the statement is made that a law embodying these points has been prepared, and has the endorsement of the National Association of Dairy and Food Commissioners to be presented before Congress at its next meeting. The opinion is expressed that the movement should be given the active support of all the medical associations in the United States, and that the members of these associations should urge on their members of Congress the importance of its speedy passage. The suggestion is made that the society appoint a committee of its most experienced members to take up the matter of the effects of the various substances now employed for the preservation and adulteration of foods and report their conclusions at the meeting in 1903.

Infant Feeding.

Dr. Adelaide M. Underwood stated that if the mother were normal, in body and mind, the infant's food should be the mother's milk. Indigestion in mother or babe should be treated by hygienic means rather than by medicine. Since food is not alone alimentary all details of healthful environment should receive minute attention. The average factory-prepared food is not to be considered by intelligent, scientific physicians. A reliable dairy must be recommended. The artificially-fed baby should in no case be left without the mother being taught the careful weighings, the study of the bowel dejections, and that deviations in these to be promptly reported. The baths of the baby, the clothing, and time to be spent in the open air are given consideration.

Address in Surgery.

Dr. George D. Nutt, Williamsport, called attention to the growing interest and importance in surgical work and stated that too much is written for self-laudation rather than for scientific value. Instead of surgery having reached the acme of its power, the author believes it just on the threshhold with a future bright with large possibilities.

Uniform Constitution for County Societies.

The constitution and by-laws proposed by the special committee were adopted as a standard or model for county societies and are to be referred to the local societies for adoption.

The president appointed a committee of five to consider the question of food adulteration; the use and abuse of the so-called preservatives and the coloring of food, and the effect of these adulterations on the health of the people. This committee is to investigate and report at the next annual meeting, and the officers of the Department of Agriculture of the State of Pennsylvania will be asked to co-operate.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Pertussis.

Monti, according to an abstract in *Amer. Med.*, recommends the following in the treatment of whooping cough: 1. Place the child in a well-lighted and well-ventilated room, the temperature of which should be kept down to 68 F. The removal of the small patients to a temperate climate during the winter is excellent. Avoid variations in winter. 2. Inhalations of boric acid and sodium salicylate.

The following are recommended by Birchfield:

℞.	Acidi carbol.	gtt. xxx	2	
	Menthol (pure)	gr. xv	1	
	Aq. destil.	℥vi	180	

M. Sig.: Six drams should be inhaled daily by means of an inhaler.

The internal treatment is as follows:

℞.	Pulv. belladonnæ	gr. iss		09
	Sodii bicarb.			
	Sacchari albi, āā	gr. xxii	1	50

M. Sig.: To be taken one to three times daily in a capsule.

[The dose of belladonna in the foregoing prescription is rather large.]

The following combination containing bromoform is recommended by Marfan:

℞.	Bromoformi	gtt. xlvii	3	00
	Olei amygdalæ dulcis	ʒiv	16	

This is to be shaken thoroughly and added to:

Acaciæ	ʒiv	16	
Aq. laurocerasi	ʒi	4	
Aq. destil.	℥iv	120	

M. Sig.: One teaspoonful three or four times daily.

Quinin is also recommended internally as follows:

℞.	Quininæ tannatis			
	Sodii bicarb.			
	Sacchari albi, āā	gr. xv	1	

M. Ft. Chartulæ No. vi. Sig.: One every two hours.

Rectal Gonorrhea.

In an article in the *Cin. Lancet-Clinic*, the treatment of gonorrhea of the rectum is carried out in very much the same way as gonorrhea of the penis or vagina. In the first place calomel is recommended in order to reduce the inflammation and to relieve the congestion in the hemorrhoidal veins. The following is recommended as an antiseptic in the form of an enema:

℞.	Sol. acidi boracici (sat.)	℥i	30	
	Aquæ	Oi	480	

M. Sig.: Use as a rectal injection.

When this solution is expelled the following is introduced:

℞.	Nargol	gr. x		65
	Aq. destil.	℥i	30	

M. Sig.: To be injected twice daily.

The author recommends that the anus be bathed morning and evening with hydrogen peroxid, followed by a solution of hydrastis canadensis, one teaspoonful to half a pint of water. The following ointment is then applied on lint:

℞.	Hydrarg. chloridi mitis	ʒi	4	
	Ichthyol	ʒi	4	
	Lanolini	℥i	30	

M. Sig.: Apply externally on lint and fasten with a bandage.

It takes, according to the author, from three to ten weeks to effect a cure by this treatment.

The patients should be placed on tonic treatment, such as syrup of hypophosphites, combined with tincture of gentian, cinchona, nux vomica and taraxacum.

Use of Salicylates in Children.

The following formulæ from Gillet are quoted by *Med. Standard*, in prescribing salicylates for children:

℞.	Sodii salicylatis	gr. viiss		50
	Syr. aurantii flor.			
	Aq. destil., āā	℥i	30	

M. Sig.: One teaspoonful every hour in a little milk.

The amount of sodium salicylate in the foregoing prescription can be varied according to the age. When a mixture can not be administered, suppositories may be used:

℞.	Sodii salicylatis	gr. viiss		50
	Olei theobromæ	ʒi	4	

M. Ft. suppos. No. iv. Sig.: To be used at equal intervals in the twenty-four hours.

Another formula may be used as a local application to the joints:

℞.	Methyl salicylatis	gr. xv	1	
	Menthol	gr. iii		20
	Petrolati	℥i	30	

M. Sig.: Apply locally around the joints, the whole being covered with cotton wool and waxed taffeta; or:

℞.	Acidi salicylici	ʒiiss	10	
	Spts. terebenthinæ	ʒiiss	10	
	Lanolini	ʒiii	12	
	Adipis	℥iiss	75	

M. Sig.: To be applied locally to the affected joints.

Treatment of Premature Baldness.

Lassar, in the *Indian Med. Record*, states that he has observed from experiments on animals that this disease is contagious, and occurs independent of any general affection or state of health of the patient. He recommends the following method of treatment: The scalp is to be washed every day with tar soap or soft glycerin soap or with soap containing sodium iodid, the soap is to be thoroughly applied and rubbed into the scalp for fifteen minutes. Following this a warm douche is used; then after the application of a corrosive sublimate solution—1 to 500—the hair is dried and 0.5 per cent. of a spirit solution of naphthalin is rubbed into the affected parts. Carbolic acid or salicylic acid may also be employed. If this treatment be adopted in the early stages, when the hair is just beginning to fall, it usually proves successful, but it must be kept up for eight weeks or more. The fact that this disease is due to a communicable morbid principle suggests that it may be conveyed by the comb and brush of the barber.

La Grippe.

The pulmonary forms of la grippe sometimes become very stubborn to treatment. The following is recommended by *La Med. Moderne:*

℞.	Pulv. terpin	gr. iv		25
	Sodii benzoatis			
	Benzonaphthol, āā	gr. iii		20
	Sparteinæ sulph	gr. ss		03
	Quininæ hydrochlor.	gr. iiss		15

M. Ft. Cachet No. i. Sig.: One such cachet to be taken four times daily; or:

℞.	Pulv. terpin	gr. iv		25
	Sodii benzoatis	gr. iii		20
	Potassii iodidi	gr. iss		09
	Benzonaphthol	gr. iii		20
	Quin. hydrochlor.	gr. iiss		15
	Pulv. nucis vom.	gr. ¼		015
	Sparteinæ sulph.	gr. ss		03
	Ergotin	gtt. v		30

M. Ft. Cachet No. i. Sig.: One such four times daily.

The following is recommended to control the cough:

℞.	Pot. bromidi	gr. iii		20
	Codeinæ	gr. 1/6		01
	Antipyrini	gr. ivss		25
	Morph. hydrochlor.	gr. ⅛		0075

M. Ft. capsula No. i. Sig.: One such to be taken two or three times a day.

To ameliorate the catarrh symptoms the following combination is also recommended:

℞.	Pulv. ext. belladonnæ	gr. iv		25
	Codeinæ	gr. iv		25
	Pulv. capsici	gr. iv		25
	Euquininæ	ʒi	4	
	Acetanilidi	ʒi	4	

M. Ft. chart. No. xx. Sig.: One powder every three or four hours; or:

℞.	Quininæ salicylatis	gr. xxxvi	2	35
	Acetanilidi	gr. xxiv	1	65
	Pulv. camphoræ	gr. iv		25
	Pulv. capsici	gr. ii		12
	Pulv. ext. belladonnæ	gr. ii		12

M. Ft. capsulæ No. xii. Sig.: One every three hours if necessary.

Eggs in Therapeutics.

L. Normand, as noted by the *N. Y. Med. Jour.*, gives the following formulæ in which eggs may be used therapeutically: The most common preparation known as "chicken's milk" is made as follows:

℞.	Yolk of one egg.		
	Hot water	℥vi	180
	Sugar	ʒv	20

M. and flavor with two teaspoonfuls of orange flower water.

RESTORATIVE PREPARATIONS.

℞.	Cream	℥vi	180
	Yolk of two eggs.		
	Sugar	ʒvii	28
	Aquæ cinnamoni	ʒxi	44

Misce.

Guibort's formula for "syrup of eggs" is as follows:

℞.	Eggs	x	
	Aquæ	ʒx	40

Beat up and mix with:

	Sodii chloridium	℥ss	15
	Aq. aurantii flor.	ʒvi	24
	Sacchari	℥ix	270

A RESTORATIVE TEA.

℞.	Yolks of three eggs.		
	Cloves	ʒxiv	56
	Sugar	gr. xxx	2
	Water	ʒviii	32
	Brandy	℥xxiii	690

M. Sig.: Serve as a drink.

Medicolegal.

SOME LEGISLATION OF THE YEAR 1902.

United States—Public Health Service.—Chapter 1370 of the Public Acts of the Fifty-seventh Congress, which provides that the United States Marine-Hospital Service shall hereafter be designated the Public Health and Marine-Hospital Service of the United States, provides, among other things, that there shall be an advisory board for the hygienic laboratory provided by the Act of Congress approved March 3, 1901, for consultation with the surgeon-general of the Public Health and Marine-Hospital Service relative to the investigations to be inaugurated, and the methods of conducting the same, in said laboratory. That there shall be appointed by the surgeon-general, with the approval of the Secretary of the Treasury, whenever, in the opinion of the surgeon-general, commissioned medical officers of the Public Health and Marine-Hospital Service are not available for this duty by detail, competent persons to take charge of the divisions, respectively, of chemistry, zoology and pharmacology of the hygienic laboratory. Provided, that all commissioned officers of the Public Health and Marine-Hospital Service not below the grade of passed assistant-surgeon shall be eligible to assignment to duty in charge of the said divisions of the hygienic laboratory, and while serving in such capacity shall be entitled to the pay and emoluments of their rank. That when, in the opinion of the surgeon-general, the interests of the public health would be promoted by a conference of said service with state or territorial boards of health, quarantine authorities, or state health officers, the District of Columbia included, he may invite as many of said health and quarantine authorities as he deems necessary or proper to send delegates, not more than one from each State or Territory and District of Columbia, to said conference: Provided, that an annual conference of the health authorities of all the states and territories and the District of Columbia shall be called, each of said states, territories and the District of Columbia to be entitled to one delegate: And provided further, that it shall be the duty of the surgeon-general to call a conference on the application of not less than five state or territorial boards of health quarantine authorities, or state health officers, each of said states and territories joining in such request to be represented by one delegate. That to secure uniformity in the registration of mortality, morbidity, and vital statistics it shall be the duty of the surgeon-general, after the annual conference required as above to be called, to prepare and distribute suitable and necessary forms for the collection and compilation of such statistics, and said statistics, when transmitted to the Public Health and Marine-Hospital Bureau on said forms, shall be compiled and published by the Public Health and Marine-Hospital Service as a part of the health reports published by said service. That the President shall from time to time prescribe rules for the conduct of the Public Health and Marine-Hospital Service. He shall also prescribe regulations respecting its internal administration and discipline, and the uniforms of its officers and employes.

New York—For Furtherance of Investigations.—In Chapter 594 of the Laws of New York of 1902, making appropriations for various purposes, there is appropriated to the department of health for necessary expenditures for the manufacture and standardization of tetanus, streptococcus and diphtheria antitoxin and for further investigations of serumtherapy in tuberculosis, typhoid fever and kindred diseases, the sum of $14,000 or so much thereof as may be necessary, such expenditure to be made on the approval of the governor, and available, October 1, 1902, for the ensuing fiscal year. For the department of health for equipment and maintenance of the cancer laboratory at Buffalo, for investigation into the cause, nature, mortality rate and treatment of the cancer, and the salaries of officials of the same, $15,000. The moneys herein appropriated to be paid from vouchers officially verified by the director of said laboratory, and approved by the state commissioner of health.

Virginia—Prohibition on Infected Persons.—Chapter 421 of the Laws of Virginia of 1902 provides, under penalty, that it shall be unlawful for any person who knows himself to be infected with any dangerous, contagious, or infectious disease, or who has recently had such disease, and has not cleansed his person and clothes so as to be free from the infection: First, to go into the company of any one who is liable to take the infection without warning such person of his being so infected. Second, to go into any church or other house used for public worship or for school purposes, or to go into any mine, mill, factory, shop, store, warehouse, depot, train, ship, hotel, restaurant or dwelling belonging to any other person, or to go into any courthouse, jail, asylum or almshouse, or to go into any like house, place or building. Third, that it shall be unlawful for any person who has been voluntarily exposed to smallpox or any other dangerous, contagious, or infectious disease to come into this state, or to go from place to place therein, within a period of fifteen days from such exposure, unless such person shall have a certificate from a competent and reputable practicing physician stating that no danger of communication of disease by such exposed person exists. When the State Board of Health or the county or city boards of health have established quarantine lines or ordered compulsory vaccination in any infected boundary, it shall be unlawful for any person to violate either of said regulations, or to aid or encourage another to violate either. But this act shall not apply to practicing physicians or undertakers when in the discharge of the duties of their respective professions or callings.

District of Columbia—To Promote Anatomic Science.—Chapter 638 of the Public Acts of the Fifty-seventh Congress creates what is to be known as the Anatomical Board of the District of Columbia. It is to consist of the health officer of the District and two representatives from each of the schools in the district conferring the degree of doctor of medicine or doctor of dental surgery; the Post-Graduate School of Medicine, and the medical schools of the United States Army and Navy. Every public officer, agent and servant, and every officer, agent and servant of any almshouse, prison, jail, asylum, morgue, hospital and other public institutions and offices having charge or control of dead human bodies requiring to be buried at public expense, shall notify the board, or such person as may be designated by it, whenever any dead human body comes into his possession, charge or control for burial at public expense. And every such officer shall, on application by the board or its agent, without fee or reward, and complying with the laws and regulations governing the removal of dead human bodies in the District of Columbia, deliver every such body to said board. Exceptions to this are where the deceased person, during his last illness, without suggestion or solicitation, requests to be buried or cremated, or relatives within a limited time claim the body or ask that it be buried, or a friend provides for its proper burial or cremation, or the deceased was a traveler who died suddenly. The bodies so received by it the board is to distribute among and to the above schools; the medical examining boards of the United States Army, Navy, and Marine-Hospital Service; and the Board of Medical Supervisors of the District of Columbia, on written request therefor, each such school and board to receive annually, as nearly as may be practicable, such proportion of the entire number of bodies distributed as the number of students enrolled and in regular attendance at such school, and the number of candidates appearing for examination before such board, respectively, engaged bona fide at such school, or examined by said school, or examined by said board in dissecting, and operative surgery on the cadaver, bears to the total number of students so enrolled in attendance, and engaged, and of persons so examined, in the District of Columbia. The schools, except those of the Army and Navy, must each give a bond in the penal sum of $200, conditioned that all bodies which it shall receive shall be used in the district and only for the promotion of the science and art of medicine and of dentistry.

District of Columbia—Reporting of Typhoid Fever.—Chapter 7 of the Public Acts of the Fifty-seventh Congress provides that every physician attending or called in to visit or examine any case of typhoid fever in the District of Columbia shall at once send to the health officer of said District a certificate, in ink, signed by him, stating the name of the disease, and the name, age, sex and color of the person suffering therefrom, and setting forth by street and number or otherwise sufficiently designating the house, room or other place in which said person can be found, together with such other reasonable information relating thereto as may be required by said health officer; and on the recovery or death of such patient the physician in attendance shall, within twenty-four hours after he becomes aware of such recovery or death, forward to said health officer a similar certificate certifying thereto.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record (N. Y.), September 27.

1 *Rational or Dietetic Treatment of "Bright's Disease" Contrasted with Surgical Intervention. William H. Porter.
2 *Tuberculosis of the Urinary Tract. P. Newmark.
3 Is It Wise for the Regular Practicing Physician to Spend Time to Investigate Psychic Therapeutics? R. Osgood Mason.
4 *Clinical Study of a New Silver Salt in the Treatment of Gonorrhea. H. M. Christian.
5 Pulse and Respiration at an Elevation of 10,200 Feet, as Ascertained by the Examination of 100 Subjects. Maurice Kahn.

Medical News (N. Y.), September 27.

6 *Myomectomy vs. Hysterectomy. Andrew McCosh.
7 *The Relative Advantages of the Complete and Partial Hysterectomy. E. E. Montgomery.
8 Wounds, with a Discussion of What Constitutes Rational Treatment. Frederic Griffith.
9 *The Importance of Diagnosis in Skin Diseases Considered Generally and as Applied to Particular Diseases. Isadore Dyer.
10 Advances in Ophthalmic Therapeutics. D. B. St. John Roosa.
11 *Bronchial Asthma and Allied Disorders; Their Summer Treatment. Beverley Robinson.
12 School Life and Insanity. J. S. Lankford.

Boston Medical and Surgical Journal, September 25.

13 *The Creation of an Artificial Valvular Fistula: *(a)* for the Treatment of Chronic Colitis; *(b)* As an Adjuvant to Certain Operations on the Stomach. C. L. Gibson.
14 *The Iliopsoas Bursa: Its Surgical Importance and the Treatment of Its Inflammatory Conditions, with Report of Three Cases. F. B. Lund.
15 *Operative Treatment of Varicose Veins. J. B. Blake.
16 *The Local Pathology of Acute General Infections Arising Through the Lymphoid Tissue of the Fauces. J. L. Goodale.

American Medicine (Philadelphia), September 27.

17 *Some Observations in Regard to Smallpox. Frederick H. Dillingham.
18 *Types of Infection Produced in Man by Intermediate Members of the Typhoid-colon Group of Bacilli. Warren Coleman.
19 Clinical Report upon Ureteral Surgery. Charles P. Noble.
20 *The Prophylaxis of Venereal Disease. John C. Spencer.
21 Relaxation of the Synchondrosis of the Symphysis Pubis, Following Normal Labor, Treated by Resection and Wiring. B. R. Schenck.
22 *School Vaccinations. William R. Fisher.
23 The Hospitals of Jerusalem. Nicholas Senn.
24 Medical Education. Charles W. Richardson.

Philadelphia Medical Journal, September 27.

25 *Chauvinism in Medicine. William Osler.
26 *An Additional Case of Tumor of the Brain, Localized Clinically and by the Roentgen Rays. Charles K. Mills; Roentgen Ray Investigation. G. E. Pfahler; Operation. J. B. Deaver.
27 Leucocytosis in Lead-Workers. L. Napoleon Boston.
28 On the Dosage in Radiotherapy. George G. Hopkins.

New York Medical Journal, September 27.

29 *Perforating Ulcers of the Duodenum. (Concluded.) John B. Murphy.
30 *Placenta Previa; Its Early Recognition and Treatment. Edward A. Ayers.
31 Complications in the Passage of a Gallstone. (To be concluded.) Neil Macphatter.
32 Pain as a Symptom in Gynecologic Disease. Samuel M. Brickner.
33 The Treatment of Yellow Fever. J. Hobart Egbert.

St. Louis Medical Review, September 27.

34 Sarcoma of Testicle and Kidney with Presentation of Specimen of the Former. Henry Jacobson.
35 A New Electric Centrifuge. Joseph L. Boehm.

Cincinnati Lancet-Clinic, September 27.

36 *The Obstetrical Aspects of Idiocy. William Gillespie.
37 *Indications for the Use of the Stomach-Tube. Henry W. Bettmann.
38 An Easy Perineorrhaphy. W. V. Watson.

American Practitioner and News (Louisville), August 15.

39 Medical Treatment of Cholelithiasis. R. Alexander Bate.
40 *Surgical Treatment of Cholelithiasis. David Barrow.
41 The Medical Management of Appendicitis. J. W. Irwin.
42 *Treatment of Fractures and Dislocations in Relation to Suits for Malpractice. John A. Lewis.
43 Nasal Obstructions. Dudley S. Reynolds.

Medical Fortnightly (St. Louis), September 10.

44 Focal Facial Epilepsy, Followed by Temporary Unilateral Paralysis of the Face and Tongue. Frank R. Fry.
45 Hemorrhage After Tonsillotomy. H. A. Leipziger.
46 The Hygiene of Pregnancy. Charles E. Paddock.
47 Smallpox; Its Differential Diagnosis. J. C. Sullivan.
48 The Great Social Evil; Abortion and Sterility. Wm. V. Loftus.

Northwestern Lancet (Minneapolis), September 15.

49 *A Safe Milk-Supply. H. M. Bracken.
50 *Intestinal Obstruction, with Report of a Case. J. W. Andrews.

Virginia Medical Semi-Monthly (Richmond), September 12.

51 *Wholesale poisoning from the Ptomaine of Milk. T. M. Baird.
52 *Absence of Appendix Vermiformis in Two Cases. Jacob Michaux.

Therapeutic Gazette (Detroit, Mich.), September 15.

53 *Two Cases of Nephrectomy for Sarcoma of the Kidney in Children, with Operative Recoveries. Robert C. LeConte.
54 Two Cases of Fistula in Ano. Joseph M. Mathews.
55 The Diagnosis and Palliative Treatment of Reducible and Strangulated Hernia. Thomas H. Manley.
56 *Concerning a New Series of Synthetic Salts: The Nucleids of Iron, Copper, Mercury and Silver. E. R. Larned.
57 *Puerperal Eclampsia. J. T. Reddick.
58 Ichthyol in Rheumatism. George S. Post.

Medical Sentinel (Portland, Ore.), August.

59 President's Address, Washington State Medical Society. J. W. Bean.
60 The Diagnosis and Treatment of Valvular Heart Disease. C. Quevli.
61 Cysts of the Kidney. Kenneth A. J. MacKenzie.
62 An Extra-uterine Pregnancy Retained Ten Years. J. B. Eagleson.

63 Method and Accuracy in Surgical Technic. R. C. Coffey.
64 Disinfection of Dwellings After Contagious Diseases. George W. Libby.
65 The Melancholic Man. Henry W. Coe.

International Medical Magazine (N. Y.), September.

66 *The Importance of Urinary Analysis in Phthisis. S. Edwin Solly.
67 *Electricity in Chronic Bright's Disease. A. D. Rockwell.
68 *Uremic Paralyses. D. J. McCarthy.
69 *The Customary Therapy of Kidney Diseases. Carl von Noorden.
70 The Significance of Intraocular Lesions Associated with Albuminuria. Walter L. Pyle.
71 Medicolegal Aspect of Chronic Alcoholism and Dipsomania. F. Savary Pearce.
72 The Management of Labor Complicated by Large-Sized Cysts of the Uterine Appendages. L. J. Hammond.

Medical Examiner and Practitioner (N. Y.), September.

73 The Early Diagnosis and Early Treatment of Cutaneous Cancer; Epithelioma. Charles W. Allen.
74 Course of the Ureters. Byron Robinson.
75 Female Risks. E. Holovtchiner.
76 An Endeavor to Estimate the Value of Certain Doubtful Lives for Life Assurance. F. LeM. Grasset.

Cleveland Medical Journal, September.

77 *Animal Tuberculosis. D. N. Kinsman.
78 *Some Observations on Appendicitis Based on 372 Operations. George W. Crile.
79 Case of Subdiaphragmatic Abscess of Splenic Origin. Charles S. Hamilton.
80 *Observations on Typhoid Fever. L. G. Leland.
81 On the Diagnosis of the Renal Function and Its Relation to the Surgery of the Kidneys. William E. Lower.

St. Louis Courier of Medicine, September.

82 Robert Willan and Dermatology. W. A. Hardaway.
83 Conditions I Have Found in Operating for the Radical Cure of Oblique Inguinal Hernia. Francis Reder.
84 Report of Two Interesting Cases of Brain Injury. F. B. Shields.
85 Aneurysm of the Transverse Aorta and Innominate Artery. William T. Coughlin.
86 Medical Examinations in Our Public Schools. E. A. Donelan.

Peoria Medical Journal, September.

87 Pharyngo-mycosis. L. R. Ryan.
88 Surgical Treatment of Retro-displacement of the Uterus. F. B. Dorsey.
89 Chronic Urethritis, Stricture of Large Caliber. Rolland L. Green.

St. Paul Medical Journal, September.

90 The Character and Tendency of Our Current Medical Literature; Notes on Its Development, Progress and Influence. Franklin Staples.
91 Dilatation of the Stomach. Christopher Graham.
92 *The Fallacy of Drainage in Diffuse Septic Peritonitis. Donald B. Pritchard.
93 *The Blood in Relation to Anesthesia—Especially Chloroform and Ether. Carl J. Holman.
94 Organization of the Medical Profession. Arthur Sweeney.
95 How Can the Public Best Be Educated as to the Importance of Preventive Medicine? H. M. Bracken.
96 The Stomach Tube in Practice. A. E. Hedback.
97 Some of the Etiologic Factors in Epilepsy. W. A. Jones.
98 Fractures and Dislocations of the Nose and Their Treatment. J. W. Robertson.
99 Sarcoma of Unusual Size. W. H. Magie.
100 Crile's Instrument for the Temporary Closure of the Carotid Arteries.

Carolina Medical Journal (Charlotte, N. C.), August.

101 Some of the Recent Remedial Measures. W. W. McKenzie.
102 Creosote. J. B. Wright.
103 Uric Acid Excess. D. J. Hill.
104 So-Called Dyspepsia. Charles A. Julian.
105 *Ergoapiol (Smith) in Diseases of the Female. Charles H. Shepard.
106 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.

Providence Medical Journal, September.

107 Pulmonary Embolism. George S. Mathews.
108 Pus in the Urine. Herbert Terry.
109 The Trade and the Profession. Hermon C. Bumpus.
110 The Treatment of Typhoid Perforations. Henry B. Potter.

Occidental Medical Times (San Francisco), September.

111 *Annual Report of the President of the San Francisco Board of Health for the Year Ending June 30, 1902.
112 Address Delivered Before Students of the University of California at the Opening of the Session of 1902. Harry M. Sherman.
113 From Ether to the Physiologic Unit. George Adam.
114 *Gonococcal Peritonitis. J. Henry Barbat.

Canadian Practitioner and Review (Toronto), September.

115 Ventro-fixation, Its Value and Results. J. Algernon Temple.
116 Strictures of the Esophagus. A. B. Welford.
117 Cirrhosis of the Liver in the Young. J. T. Fotheringham.
118 The Diagnosis of Stone in the Bladder. A. Groves.

Ophthalmic Record (Chicago), August.

119 *The Prognosis of Myopia. Francis Valk.
120 A Case of Hydrophthalmus. Gilbert D. Murray.
121 A New Self-Illuminating Ophthalmoscope. G. F. Suker.

Medical Summary (Philadelphia), September.

122 Chronic Diseases. J. L. Wolfe.
123 Neurasthenia. S. A. Buchanan.
124 Milk. J. M. Jones.
125 A Bad Case of Constipation. Ben H. Brodnax.
126 Typhoid Fever. M. G. Price.
127 The Therapeutic Use of Hydriodic Acid. Louis J. Pons.
128 The Dreamer in Medicine. J. M. Lynch.
129 Therapeutic Value of X-Rays. Thomas C. Leitch.
130 The Mosquito. Silas Hubbard.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), June.

131 The Passing of the Historic McDowell Building at Danville, Ky. William L. Lowder.
132 *In Plain Language What May We Expect from Treatment of Ocular Muscle Errors? Walter R. Parker.
133 *Practical Suggestions on the Administration of Ether and Chloroform. Joseph B. Whinery.

New Yorker Medicinische Monatsschrift, August.

134 Zur Casuistik des Empyems der Stirn- und Siebbeinhohle und dessen Complication seltens des Auges. Max Toeplitz.
135 Zur Behandlung der Dysenterie. A. Herzfeld.
136 Ueber kunstliche Sauglingsernahrung. Johann Landau.

Denver Medical Times, September.

137 President's Address, Colorado State Medical Society. R. W. Corwin.
138 Uncertain Therapeutics. J. M. Blaine.
139 On the Trail of a Pain. Edward C. Hill.
140 Syphilis of the Nervous System. Millard P. Sexton.
141 The Treatment of Dropsy of Cardiac Disease. S. C. Reisman.

Medical Review of Reviews (N. Y.), August 25.

142 *The Value of the Roentgen Rays in the Treatment of Carcinoma. Carl Beck.

Memphis Medical Monthly, September.

143 Serum Therapy in Laryngeal Diphtheria. Adolph O. Pfingst.
144 The Prevention of Tuberculosis. Robert W. Tate.
145 A Modern Hospital. G. G. Buford.
146 Cancer of the Larynx Operated on Successfully by the Endolaryngeal Route. A. Bonain.
147 Acute Entero-colitis. A. C. Norman.

Journal of Medicine and Science (Portland, Me.), September.

148 A Few Facts Concerning Our Present Practical Knowledge of Certain Common Infectious Diseases—Notes on Modern Advancement. Franklin Staples.
149 A Case of Bothriocephalus Latus. C. E. D. Lord.
151 Criticisms on Christian Science. E. H. Judkins.

Western Medical Review (Lincoln, Neb.), September 15.

151 The Passing of Materia Medica and Therapeutics. I. C. Philbrick.
152 Progress in Therapeutics in the Diseases of Children. Georgiana Grothan.
153 Atypical Cases of Ectopic Gestation. Charles C. Allison.
154 Ulcer of the Cornea in Smallpox. D. C. Bryant.
155 *Etiology and Treatment of Migraine. J. M. Aikin.
156 Cerebral Thrombosis. F. E. Coulter.
157 Care in Vaccination. S. R. Towne.
158 Acute Suffocative Pulmonary Edema. LeRoy Crummer.

American Medical Compend (Toledo, Ohio), September.

159 Small Foreign Bodies in the Cornea; Their Results and Treatment. George F. Suker.
160 Infant Feeding. Wm. A. Dickey.
161 The Use of Adrenalin Chlorid in Typhoid Fever. Edwin A. Murbach and J. U. Foster.
162 Why Patients Sometimes Get Worse. David O. Hungerford.
163 *Ergoapiol (Smith) in Diseases of the Female. Charles H. Shepard.

Medical Bulletin (Philadelphia), September.

164 Sycosis—Rupia—Hyperidrosis. John V. Shoemaker.
165 The Treatment of Kidney Disease. George W. Pfromm.
166 Apoplectiform Neuritis—Paroxysmal Meralgia—Hysterical Hemiplegia and Hysterical Breast—Hysterical Apoplexy. Dr. Raymond.

Texas Medical Journal (Austin), September.

167 The Founding of a State Institution for Epileptics in Texas. B. M. Worsham.
168 Cholera Infantum. S. Burg.

Columbus Medical Journal, August.

169 Diarrhea. George M. Waters.
170 Care of the Nose. C. P. Linhart.
171 Female Sterility. Theodore E. Courtright.

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1. **Bright's Disease.**—Porter's article is a lengthy one discussing the pathology and treatment of Bright's disease. The conclusions are summed up in the following: "1. To analyze thoroughly the results of treatment in 'Bright's Disease' one must have a clear conception of the histology and physiological functions of the kidneys. 2. Its complex pathology must be clearly understood. 3. All the etiological factors must be given full consideration. 4. The etiological factors are numerous and very complicated in their action. 5. Only one, if any, of these can be reached by surgical interference. 6. Most of the etiological factors can be modified or removed by well-directed rational dietetics and therapeutics. 7. Histologically speaking, 'Bright's disease' can never be cured. 8. Physiologically speaking, the etiological factors can be modified, and often removed, the symptoms held in abeyance, while the renal glands

perform their functions normally. 9. 'Bright's disease' is by nature an oscillatory malady, accompanied by frequent remissions and exacerbations. 10. Remissions must not be mistaken for cures. 11. Rational dietetics and therapeutics offer the largest possibility for a complete physiological cure. 12. A well-regulated mixed diet, especially if composed largely of the animal class, when it can be tolerated, yields the best results. 13. All therapeutics to be rational must be directed not at the pathological lesion *per se*, but toward establishing a more perfect digestion and metabolism and a decrease in the work imposed upon the renal glands."

2. **Tuberculosis of the Urinary Tract.**—The diagnosis of urinary tuberculosis is discussed at length by Newmark, who insists on the necessity of keeping in mind that there is no one method or one single clinical feature for the diagnosis. All the facilities of laboratory and clinical observation are required sometimes. The frequent desire to urinate with frequent micturition and the pathologic condition of the urine are the chief symptoms met with. The frequent desire to urinate is usually the first symptom to call the patient's attention, and it becomes more frequent as the disease advances. It is soon associated with pain which is usually in the middle of the penis, being different in this respect from that of stone, which is located at the meatus. In the later stages the violent contractions and the periods of inflammation diminish the lumen of the bladder so that it scarcely contains more than a tablespoonful. The urine is that of chronic catarrh, with two characteristic features, hematuria and tubercle bacilli, the latter generally lying parallel with each other in groups, thus being different from the smegma bacillus which may occur singly or in irregular groupings. Decolorization of the smegma bacillus also by acid alcohol is another distinguishing point as is also its more rapid growth in culture. The two places where the bladder tuberculosis is most liable to begin are the ureteral orifices and the trigone, the former especially when it is secondary to renal tuberculosis. In the treatment the diet and proper climatic and hygienic surroundings play as important a part as they do in other tuberculous cases. The internal use of urinary antiseptics and antitubercular drugs should be begun early, and he suggests guaiacol, beginning with 3-drop doses three times a day, increasing up to 20 drops, or the same number of grains of its carbonate. The urinary antiseptics, which are especially indicated when pus is found in the urine, are salol, resorcin, boric acid and methylene blue. He cautions against over-distension of the bladder in the local treatment, and he prefers for instillations weak solutions of corrosive sublimate. Nitrate of silver is of no value, and when a case of chronic vesical catarrh does not respond to a few nitrate of silver applications he is inclined to diagnose it as pyelitis or tuberculous disease. Sometimes it may be necessary to resort to surgery to relieve the pain and install permanent drainage. For this suprapubic cystotomy is preferable. The different forms of tuberculous kidney disease are noted, and he says while there are manifold symptoms the positive diagnosis can be made only by a careful study of the surgical history, and recourse to all diagnostic means, including careful bacteriologic examination.

4. **Silver Vitellin.**—This is a new organic silver compound described in the *Medical Record* of May 24, 1902. It is produced from a proteid derived by chemical manipulations of wheat and subsequently combined with silver. It contains 30 per cent. of silver and is extremely soluble. Its use in gonorrhea is here described by Christian who, from his experience in the University Hospital, Philadelphia, finds it the best silver compound ever offered for this purpose and gives the following reasons for this belief: "1. It is absolutely free from any irritating properties, solutions as high as 5 per cent. causing no discomfort. 2. The gonococci on and beneath the urethral mucous membrane are rapidly destroyed. 3. The amount of urethral discharge is in a majority of cases at once lessened in a marked degree. 4. The actual duration of the disease is shorter than is obtained by the use of any other silver salt. In our cases thirty-eight were cured in from two to four weeks."

6. **Myomectomy vs. Hysterectomy.**—McCosh reports his experience in practice with uterine fibromyomata, describing the operation and illustrating it with cuts. He offers the following conclusions: "1. In young women with uterine fibroids demanding removal myomectomy should always be the operation of choice. 2. Myomectomy is possible and advisable in the great majority of cases of fibroid tumors in young women. 3. For the safe performance of myomectomy the strictest asepsis is needed, otherwise it becomes a most dangerous operation. 4. In the operation of myomectomy fear of hemorrhage should be case aside and bold and rapid methods should be adopted. 5. The operation is attended by the same danger to life as is hysterectomy. 6. The ultimate results as regards menstruation, pain and pregnancy, are satisfactory."

7. **Complete and Partial Hysterectomy.**—Montgomery favors the complete operation, especially the method of Doyen. "It is hardly necessary to say that it consists in raising the uterus with the enclosed tumors through an abdominal incision, and having it held by an assistant well over the symphysis, while an incision is made with scissors through the cul-de-sac upon forceps which were previously placed in the vagina. Through the opening thus formed the cervix is seized, drawn upward and severed with scissors from its vaginal attachment. With slight pressure with the finger the cervix is easily drawn away from the bladder and torn from the broad ligaments. The uterine arteries are generally laid bare and can be seized before bleeding, or upon the first spurt. The uterus is thus pulled upon until the vesico-uterine pouch is reached, which may be broken through, and the uterus is only attached by that portion of each broad ligament which contains the ovarian artery. This is seized with compression forceps external to the ovary and the uterus cut away. The broad ligaments are crushed with the angiotribe external to the forceps and ligated with chromic catgut in the groove. The uterine arteries are ligated with the same material, and the peritoneum closed over the vagina with continuous catgut suture. This suture should be so introduced as to draw up the vagina at each lateral angle." He does not believe that leaving a small portion of the cervix can either form a better vagina or lessen the tendency to senile atrophy. It makes it more difficult to prevent the formation of dead space in which serum or blood accumulates and which, from its proximity to the bowel, can readily become infected. When the cervix is removed there is left a funnel-shaped cavity which drains into the vagina. The following advantages are claimed for the complete operation: "Expedition in performance of the operation; complete and secure hemostasis; increased freedom from septic infection; and the entire removal of an organ, the retained portion of which may be the source of subsequent degeneration."

9. **The Diagnosis of Skin Diseases.**—Dyer offers the following as the cardinal points in the diagnosis of skin disorders: "1. The location of the disease is the first point of study; 2, then the distribution on the particular region on which it occurs; 3, the arrangement of the component parts, or lesions. The lesions themselves must be studied in detail so as to classify the disease. Besides these cardinal points there are certain points in diagnosis which are important in their value as guides: 1. Eruptions which are bilaterally symmetrical are either constitutional in origin or are exposed to the identical local cause on both sides of the body. 2. Parasitic diseases are found on the flexors preferably, or on the exposed parts of the body. 3. The more chronic diseases of the skin become the deeper the color; on the other hand, the brighter and more vivid the color the more acute the disease. Scales are the evidence of chronicity; likewise ulcers and scars. 4. Fluid lesions seldom itch. Papular eruptions almost always itch. 5. Single ulcers are almost always syphilitic, trophic, traumatic or malignant; multiple ulcers are tubercular, syphilitic, or malignant. 6. On the face ulcers are seldom due to other causes than cancer, syphilis or tuberculosis. 7. The color of eruption on the Caucasian is always important in diagnosis. Syphilis is pigmented brown or buff as its eruptions fade or disappear. Leprosy is always shaded brown or purple. Lichen ruber is always violaceous or white. Psoriasis is always pale

red covered with white scales. Seborrheic eczema is always yellow red with greasy scales. 8. The odor in skin diseases is important. Syphilis, when ulcerating, smells rancid; favus smells mousy; varicose ulcers smell sweet; neurotic ulcers, or those of leprosy are nauseous, foul and intense; rodent ulcer has a smell of rotting meat."

11. **Bronchial Asthma and Allied Disorders.**—Robinson pleads for the hygienic treatment of bronchial asthma, giving all due attention to the reflex causes. He favors change of scene and the water cure treatment, varied, of course, according to the special conditions as to the drain on the kidney function, involvement of the respiratory tract, etc. For the former he would advise the mild alkaline springs such as the Homburg or Royan, and for the latter the sulphur springs like those of the Aix-les-Bains are more beneficial. In this country he advises the Sharon or Richfield springs, or going to some region of the Adirondacks or the White Mountains. Any sinning agent or organ requires attention, especially the nose and stomach. In these cases there is apt to be dilatation of the right heart, hence high mountainous elevations are to be avoided. He does not believe the vicinity of fresh-water lakes or the seashore is advisable. The digestion should be carefully looked after. In cases where there is an accompanying skin trouble, arsenic is often useful. As far as surgery is concerned he considers it to be a last resort.

13. **Chronic Colitis and Jejunostomy.**—Gibson advocates the formation of a fistula in the cecum, using a method analogous to Kader's operation for gastrostomy, and reports cases which he thinks indicate that at least certain cases can be remedied by this method. He uses the valvular fistula also as an adjunct to certain operations on the stomach and for introducing food directly through the jejunum. He reports a case which, however, did not survive. He recommends it on the following grounds: "That there is a demand for some such additional means of maintaining the patient's strength immediately after a severe operation on the stomach. That it promises to be efficacious. That it adds little, if any, risk to the original operation. That it can be made after discontinuance of the anesthetic, and therefore does not substantially prolong the operation. That the feeding can be begun, if necessary, on the operating table. When the fistula has outlived its usefulness it can be put out of commission by withdrawal of the tube, and should close spontaneously in two or three days without essential leakage." He also adds that he is contemplating using such a fistula as a substitute for gastroenterostomy in some advanced cases. The operation would then consist simply of opening the abdomen long enough to reach and bring up the first loop from the duodenal-jejunal junction. The patient will finish his existence on the same rationale as the patient after gastrostomy.

14. **The Iliopsoas Bursa.**—The summing up of Lund's article is given as follows: "1. The iliopsoas bursa possesses surgical importance, owing to its position and its frequent connection with the hip-joint. It frequently extends above the pelvic brim. 2. It may be involved in osteo-arthritis, gonorrheal infection or suppurative arthritis of the joint, and the symptoms due to the disease of the bursa may dominate the clinical picture. 3. In gonorrheal arthritis incision of the bursa affords an easy method for reaching and draining the joint. 4. In osteo-arthritis relief of pain is afforded by incision of the bursa. 5. The bursa is best reached by a vertical incision just below Poupart's ligament, between the anterior crural nerve and the femoral artery. The iliopsoas muscle may be drawn inward, or, as is perhaps more direct and preferable, the fibers may be separated by blunt dissection in the line of the incision. 6. Where the bursa is connected with the joint a ready diagnosis of the condition of the head of the femur and acetabulum may be made by passing the fingers through the opening in the bottom of the bursa. 7. Iliopsoas bursitis should be more often considered in the differential diagnosis of obscure tumors in the groin, and such a diagnosis should be possible in cases where the hip-joint is known to be diseased and a tumor suddenly appears in front of the joint, under the anterior crural nerve and femoral vessels, which is very painful and tender, and perhaps gives to the palpating finger a sensation of deep fluctuation."

15. **Varicose Veins.**—Blake first gives a historical review showing the operation for varicose veins dates back to ancient times, quoting from Plutarch that Marius underwent an operation where both legs were to be operated on at one sitting, and remarks that we have not progressed far beyond this at the present time. He considers multiple ligation for varicose veins more effective than the other methods. He criticises the Trendelenburg method slightly as interrupting the return circulation too seriously in certain cases. In the future he says it is desirable to settle two points in the operative treatment of varix: "1. To determine how often the deep veins are actually and clinically affected, in connection with superficial varicosity, and how it is possible to determine the condition of these deep veins before operation. 2. To subject a large number of cases of all degrees of varicosity and its complications to the same method of treatment, and trace the results carefully for one or two years. This method of treatment might be the unmodified Trendelenburg operation, or this operation combined with local dissection. The palliative treatment should be tried at first, and then if this is not followed by improvement, and in absence of organic disease, operation should be recommended. The future history of the case should be carefully followed, as in this way only can statistics be collected from which logical conclusions can be drawn.

16. **Tonsillar Re-Infection.**—Goodale finds the tonsils are not protective organs but are usually open canals of connection between the interior of the organs and their exterior, which afford a way for the polynuclear leucocytes to make their way to the surface. The pathogenic bacteria do not seem to be able to penetrate the tonsillar tissue itself. There are, possibly, special lesions being produced by infectious organisms in the tonsils in the way of proliferating the lymphoid and endothelial cells of the organs and inducing local foci of suppuration. Such intrafollicular abscesses may discharge into the veins and produce general septicemia.

17. **Smallpox.**—Dillingham reviews the diagnosis of smallpox, illustrating his remarks with cases and sums up towards the close the general characteristic differential symptoms. He remarks that each case must be carefully studied in regard to its history, disease symptoms and its lesions. The character and life duration of the lesions individually or collectively must be taken into consideration, and even then in many cases, and although backed up by a large experience, one may fail in making a correct diagnosis.

18. **Typhoid and Allied Infections.**—The different infections of the typhoid type are noticed by Coleman, who remarks that we must abandon the idea of specificity of typhoid fever, unless we wish to be hopelessly confused. He thinks we ought to confine the terms paratyphoid and paracolon to the domain of bacteriology and broaden the scope of the etiology of typhoid fever to include these several organisms: *Bacillus fecalis alcaligenes* (?), *Bacillus typhosus*, *Bacillus paratyphosus*, and certain members of the paracolon group (beta-paratyphoids). He goes over the reported cases, their wide distribution and the relative frequency of the paratyphoid manifestations, finding that, excluding Widal's case which did not present any constitutional symptoms, 27 cases of paratyphoid have been reported. In two, autopsies were performed and the characteristic symptoms of typhoid were absent. Clinically they resemble, of course, the genuine disease. Most of the cases were among young male adults. He notices also the cases reported by Brill which failed to give the Widal reaction, and suggests that, if they were examples of paratyphoid, previous typhoid infection did not produce any immunity against paratyphoid. He asks: Could it be possible that some of the second attacks of typhoid fever reported have really been due to infection by different members of the same group of bacilli? The only reliable criterions for diagnosis are absence of the Widal reaction in proper dilution (not less than 1 in 40) with a positive reaction against a known paratyphoid bacillus or the recovery of the paratyphoid bacillus from the blood, urine, stools, or complicating inflammatory process.

20. **Venereal Prophylaxis.**—Spencer reviews the recommendations of the New York committee and condemns regulation of open prostitution and segregation; the one as putting a premium on illicit vice and the other as rendering it familiar and less repulsive. He holds that education must be the principal means of prophylaxis, with proper regulations for treatment, and there should be more hospital accommodations for cases of this sort.

22. **School Vaccination.**—The point made by Fisher is that compulsory vaccination may lead careless or unprincipled physicians to give false certificates. He thinks the control of certifying to vaccination should be taken away from physicians in general and vested in special officials of guaranteed competency. The present methods sometimes give anti-vaccinationists a chance to make capital of some of the mistakes due to careless certification.

25.—Dr. Osler's address was noticed in The Journal of October 4, p. 855, and editorially in this issue.

26. **Brain Tumor.**—The case here reported by three authors is given in detail, and the following conclusions as regards the surgery of these cases are offered: "1, that as soon as a brain tumor is clearly diagnosticated, if presumably it is in an accessible area, operation should at once be performed; 2, that a Röntgen ray investigation should be added to the other methods of making a diagnosis; 3, that large openings in the skull should always be made; 4, that the operation should be osteoplastic in order not to leave a permanent opening in the skull and to add to the chances of maintaining the vitality of the bone flap; 5, that preparation should always be made to perform a Crile operation for temporary clamping of the carotids as soon as hemorrhage becomes threatening, and 6, that the operation in some cases should be done in two stages, the propriety of this procedure being determined by the circumstances attending the first operation."

29. **Ulcers of the Duodenum.**—The conclusion of Murphy and Neff's article appears in this number and the authors find that, in many cases, the diagnosis is difficult or impossible without exploratory laparotomy, and in many cases there are no evidences of duodenal disease prior to the perforation. The most important physical sign in addition to those of perforative peritonitis is the flatness of the superficial piano percussion note. In the case reported leucocytosis was pronounced. It is not a necessary manifestation of perforation or of inflammation, but simply means the reaction of blood to infection. and may be absent also in typhoid perforation. Collapse is absent in duodenal perforation except where associated with severe hemorrhage. It is not a manifestation of perforation *per se*, and is always secondary to abrasions of the duodenal or peritoneal endothelium permitting rapid absorption of the products of infection. The operation should be performed at the earliest possible moment after occurrence of the perforation and the mortality is in direct proportion to the delay. The longer the escaping matter is in contact with the peritoneum the greater the danger of destruction of the endothelial covering and of absorption. The operation must be complete, that is, it must be pursued to an effective suture of the perforation; drainage alone is insufficient. The incision should be through the right rectus muscle and can be carried up to the costal arch or downward to the symphysis pubis without dividing any of the transverse muscles. Drainage after suture is a matter of personal choice dependent on the pathologic conditions present. The after-treatment is that commonly followed after abdominal section excepting that the patient is kept elevated in bed at an angle of 35 degrees for the first forty-eight hours. The prognosis depends on the virulence of the peritonitis produced, on the time the material is allowed to remain in the peritoneum and on the presence or absence of abrasions of the peritoneum at the time of operation.

30. **Placenta Previa.**—The great need of the early diagnosis of placenta previa is the first thought, as Ayers remarks. The custom should be, he thinks, to examine every pregnant patient at the sixth month vaginally and abdominally. This would cause a heavy reduction in the maternal mortality from placenta previa. The ideal time for induction of labor in cases of central or marginal locality is, he thinks, best fixed at the eighth month. If the patient can be put in a hospital and have the very best of care and the pregnancy is before the eighth month, it is advantageous and conservative to delay, other things permitting. Where the patient can not be constantly attended it is best to produce delivery at the earliest possible moment when proper preparation can be made. In case of partial placenta previa induced labor is rarely required and the condition is rarely recognized before term. The bleeding should stop when the head engages. Ayers gives the details of treatment of a case at length, and in conclusion discusses the propriety of Cesarean section. He thinks all that can be said of it is that the method has sufficient justification for further trial, but in an addendum to the paper he says that he believes even by applying Cesarean section to cases of placenta previa centralis, we shall not obtain better results as regards the fetal mortality than with our commonly practiced method. This is the conclusion he has reached after reading Schauta's article in the *Interstate Medical Journal* for April.

36. **Idiocy.**—The conclusions reached by Gillespie as to the obstetric aspects of idiocy are that the more frequent use of the forceps for the object of preventing asphyxiation will tend to decrease the percentage of idiots and infantile cerebral palsy, and plastic paralysis will also decrease. Congenital defects are no doubt often due to injury during parturition and the rational management of labor will reduce the number of these cases. In thoroughly developed children asphyxiation occurs before birth, in the premature it generally develops after birth. A clinical distinction may be made between cases where cerebral injury results from asphyxia and those in which asphyxia follows cerebral injury, from the fact that in the former the circulation is disturbed from the start, while in the latter the disturbance of circulation follows respiratory failure. In children with inherited neurotic tendencies idiocy may follow an injury that would not have serious consequences in one of more stable antecedents. While injury from forceps is not a very prominent cause of mental defect, there can be no doubt that in exceptional cases such conditions can be ascribed to their abuse and not their use, and for every case of idiocy or paralysis resulting from asphyxia we have many fetal deaths which might have been saved with more skilful obstetrics.

37. **The Stomach-Tube.**—The uses of the stomach-tube are laid down by Bettmann, who thinks that in most cases it can be dispensed with, and is rarely required in any case where the stomach can empty itself. It is of use when we want to give the stomach rest. In advanced or obscure cases, especially in those in which organic changes have occurred in the stomach, it aids us in the determination of the exact pathologic condition. In certain conditions where the stomach is in a constant state of irritation by secreted mucus, food remnants, fermentation products, etc., the tube offers us a rational and valuable therapeutic aid.

40.—See abstract in The Journal, xxxviii, p. 1389.

42.—Ibid.

49. **A Safe Milk-Supply.**—The conclusions as to a perfectly safe milk-supply are given by Bracken as follows: "1. To secure a safe milk-supply it is necessary that milk should be collected and cared for under strict sanitary regulations. The milk should be controlled by such regulations from the time it leaves the cow until it reaches the consumer. 2. Only cows that have been tested with tuberculin, and thus shown to be free from tuberculosis, should be permitted in dairy herds. 3. It is impractical to attempt to secure a pure milk-supply by the occasional testing of dairy herds with tuberculin, with no restrictions upon the herds during the intervals between testings. 4. All milk that is not handled under the most rigid sanitary regulations from the time of its collection until it has reached the consumer should be pasteurized. 5. The commercial pasteurization of milk is a practical means by which to secure a safe milk-supply for large cities, for by this means the filth which careless milkers have allowed to enter the milk is removed and the dangers from the various pathogenic bacteria which may be present is reduced to a minimum. 6. Pasteurization, while a fair commercial makeshift, is but a

poor substitute for cleanliness as a means of securing a safe milk-supply."

50. **Intestinal Obstruction.**—The symptoms of intestinal obstruction are reviewed by Andrews, who reports a case, and he emphasizes the following points: "1. In diagnosing intestinal obstruction, consider well the associated symptoms, and do not place too much reliance upon any one or two symptoms. 2. Operate as soon as the diagnosis is made; do not try medicines for a few days and then operate, for this would be a fatal compromise. 3. If necessary to relieve pain and husband the strength of the patient, opiates may be given after the diagnosis is made and before the operation. 4. Never give opiates after the operation. 5. Perhaps of most importance, if obstruction has existed for two or three days, the abdomen is distended and tympanitic, the pulse rather rapid and wiry, do not try to make a technically complete operation, but rather perform an enterostomy, and be content with an artificial anus." In the case reported he thinks he might have saved life if he had made an artificial anus under local cocain anesthesia and allowed the bowels to have thoroughly emptied themselves, and while he has always used the Murphy button for intestinal anastomosis he is inclined to believe anastomosis by suture better, as leaving a larger opening and causing less danger of obstruction. He also remarks that the intestine will not bear much handling. The sooner the surgeon learns this the sooner will he succeed in all abdominal surgery.

51. **Milk Poisoning.**—Baird reports an epidemic of poisoning by milk ptomains in a Virginia hotel, which he attributes to the keeping of milk in metal vessels. This he thinks hastens the process of formation of ptomains. In the case reported the epidemic was checked when the vessels were disused.

52. **Absence of Appendix.**—Two cases are reported by Michaux in which the appendix was found to be entirely absent without any trace of one having existed before. In each of the cases appendicitis was diagnosed. One proved to be a perinephritic abscess and the other a degenerated and cystic ovary.

53. **Sarcoma of the Kidney.**—The question of operating in this generally fatal condition is the principal reason for this article by LeConte in which he reports two cases, one of which was temporarily relieved, the other dying 45 days after operation from alleged pneumonia. The chances of operation are, of course, not the best, but from the experience and findings of other authorities, including two cases by Abbe which might perhaps be called cures, LeConte deduces the following conclusions: "1. With modern methods the immediate mortality of the operation should be reduced to 15 per cent., or even a little lower. 2. Operation should prolong the average duration of life, dating from the first symptom of the disease. 3. The percentage of cases that will go three years or more without a sign of recurrence—the so-called cures—will be very greatly increased, if the physician can make an early diagnosis and can be assured of the fact that an immediate operation is proper and justifiable. 4. When the ultimate results are fatal, the operation relieves the suffering of the patient, and makes death less painful."

56. **The Nucleids in Medicine.**—Larned's article treats of the value of the synthetic compounds of iron, copper, mercury and silver with nucleinic acid, reviewing the literature and the following are his deductions: "1. These new salts of nucleinic acid are rational reconstructives; they are true tonics; they increase physiologic resistance; they increase the functional activity of secretory organs. 2. They are powerful germicides, while not harmful, but beneficial to the tissues. 3. If our present knowledge of nucleins and leucocytosis is correct, then the nucleid is the proper form for administration. 4. We do not positively know the rationale of their action, but we have nothing which holds out such prospects for successful medication. 5. These new synthetic salts are valuable additions to the pharmacopeia."

57.—See abstract in The Journal, xxxviii, p. 1389.

66. **Urinary Analysis in Phthisis.**—The importance of repeated uranalysis in phthisis is insisted upon by Solly, who remarks that albuminuria is a dangerous complication, and while Bright's disease is rarely the cause or precedent of phthisis, it is not an unfrequent sequel. The large quantities of meat and eggs advised in phthisis should be curtailed in Bright's disease, especially the eggs, and milk should be substituted as far as possible. Tuberculosis of the kidney sometimes occurs in the course of chronic phthisis, and while usually hopeless, yet its early recognition and treatment may prolong life and relieve suffering. Diabetes is not of infrequent occurrence, neither is diabetes insipidus rare. Aside from the diagnostic value of uranalysis, it is of value in estimating the digestive and other disorders. The urine is often diminished during sweating. Urea increases during hectic and diminishes with vomiting or diarrhea and pleural effusions. The chlorids are increased during hectic and diminished with copious expectoration and may disappear with an intercurrent pneumonia. The diazo-reaction, according to his experience, is rare, and occurs only in complications. What is needed is an ordinary chemical analysis, and if it shows an abnormal condition other tests should follow. With abnormal specific gravity it is well to insist on daily measurements of urine. If it is high and the amount of urine normal it may be taken to indicate an excess of uric acid. When there is an excess of urates, it always shows a faulty metabolism and should incite investigation of the diet, rest, exercise, etc. Hyperacidity with scanty urine, if persistent, is often an indication of renal lithiasis. An alkaline urine after digestion, with ammonia, is evidence of cystitis. An excess of indican generally means intestinal indigestion of putrefactive character and may also indicate retained putrid pus. If lithemia occurs it is well to follow it up and treat it, there being a uric acid diathesis upon which the tuberculosis and phthisis has become engrafted. The treatment of the underlying disorder may help the complications. Tuberculosis often occurs in persons who have a gouty bronchitis and in any case it is important to take the history and study the subject thoroughly. He has found urinary analysis one of the necessary procedures.

67. **Electricity in Bright's Disease.**—Rockwell finds that electricity is of advantage in Bright's disease, though it can not be shown that it affects the waxy or cirrhotic kidneys. Its action on simple hyperemia, acute inflammatory affections and many passive congestions is especially mentioned. It may be that they are cases of simple renal hyperemia, not yet having crossed the boundary line of actual Bright's disease, but he thinks some of them are more serious. The methods of the employment of electricity in his hands that have been most useful are the high tension faradic current and the so-called static wave current, the latter especially.

68. **Uremic Paralyses.**—The various forms of uremic paralyses are described by McCarthy, who remarks that they are most commonly seen in the chronic forms, like chronic interstitial nephritis, and the paralytic symptoms, as a rule, will follow the kidney symptoms, but exceptions are frequent, especially in chronic dements and alcoholic cases. Premonitory symptoms, when they occur, have nothing unusual about them. Convulsions are a very frequent accompaniment of paralysis, and the latter is usually more intense after the seizure. It may be complete or partial and the reflexes may be lost, present or increased. Sensation is usually preserved. Speech disturbances may be varied. Where the paralysis is hemiplegic or brachial in type, and affects the right side, motor aphasia is met with. Word deafness has been described, but speech tests, on the whole, are usually unreliable. The diagnosis between this condition and organic hemiplegia is at times impossible and always difficult. The history of kidney disease is important and watching the patient, detecting a gradual return of power, to a certain extent will exclude capsular hemorrhage. The type of kidney disease associated with these paralyses usually produces very little albumin in the urine, and the specific gravity is usually low before the attack. It is the diminution in quantity of the urine that decides the attack. A careful examination for tube casts should be made. The same pathologic conditions exist as might lead to rupture of a cerebral vessel and the diagnosis will have to be made

often on account of the varying character of the paralytic symptoms, convulsions, condition of the reflexes, etc. The pathologic findings consist mainly in an edematous or wet brain, though not always. Occasional absence of edema makes it probable that the paralysis is independent of this condition. The commonly accepted theory is that of a toxin acting on the cerebral cells, and the treatment and prognosis is the same as those of the uremia. The mental state varies between acute delirium and chronic delusional types. The latter may be associated with hallucinations of sight and hearing, and while a single delusion may occur, it is usually not completely systematized.

69. **The Therapy of Kidney Diseases.**—The dietetic treatment for chronic and acute nephritis consists largely in the milk diet, though there may be cases in the chronic types where long-continued use of this diet works harm. Where patients do not bear the milk diet well, a small quantity of meat, preferably white meats, one or two eggs, some vegetables, fruits, etc., may be given. Strong condiments, alcohol and other stimulants are, of course, to be prohibited. In contracted kidney the diet may produce trouble. Most patients can endure a partial milk diet and Von Noorden would restrict the quantity of eggs and meat to be permitted. As to alcohol, opinions differ, but beer should be usually rigidly prohibited. Von Noorden gives a diet table for a special case which shows, he thinks, how impossible it is to draw conclusions in regard to the value of any certain diet from a short series of determinations of the albumin excretion. Fluctuations in this are valueless as regards this matter. In the chronic contracted kidney, albuminuria is still more unreliable. We should not attach too much significance to the changes in albumin excreted nor should we underrate their importance, especially if they occur parallel with the changes in the general condition. In exacerbations the eliminative power of the kidneys must be regarded, and tests by methylene blue or other chemicals that do no harm, may be of occasional value, but we can not draw any definite conclusions as to the power of the kidneys to eliminate the normal excretions from these. We must follow the much more tedious method of testing the elimination of these products themselves.

77. **Animal Tuberculosis.**—Kinsman reviews the principal data as regards the propagation of animal tuberculosis to mankind, and insists on the pasteurization of milk, cooking of flesh and regulating the herds according to the rules given by Bangs of Denmark, namely, the tuberculin test, elimination of the really sick animals, disinfecting the stables, and inoculating the healthy animals from time to time to determine their condition.

78. **Appendicitis.**—From an analysis of 372 operations Crile holds that it is perilous to let the case run until it has become severe, and that there is no reason for not advising the interval operations after the first attack, and of not operating on the appearance of the first symptoms of the second attack. When operation is not performed he would follow Ochsner's method of absolute rest for the intestines.

80. **Typhoid Fever.**—From the study of a number of cases, Leland has come to the conclusion that the cold pack is not as valuable an antipyretic as generally supposed, and that the production of antibodies is not materially facilitated, while the application of cold to the skin increases the violence of some complications, notably hemorrhage and meningitis. He has also made a detailed study of three cases of urinary infection. The majority of these he finds occur about the end of the third week, and that the infection of the urine is not always accompanied by vesical catarrh. The increased desire to urinate is not always present. The urine may be normal to the naked eye, and many of the cases carry a temperature attributable to infection alone. His article is illustrated by temperature charts.

92. **Drainage in Peritonitis.**—Pritchard's article is a plea against the use of drainage in intraperitoneal operations. He thinks we should not drain the peritoneal cavity, which fails us because we interfere with its work and it rebels. He reports two cases treated without drainage with good results.

93. **Blood in Relation to Anesthesia.**—The early ideas in regard to the temporary action of ether and chloroform on the blood are confirmed, according to Holman, by recent researches, and he specially thinks there is danger in their use when there is a very low percentage of hemoglobin. He reports a case of operation for gall-bladder disease with fatal results, which he attributes to temporary hemolysis by chloroform in a patient with low hemoglobin percentage, where there was insufficient nourishment brought to the respiratory centers.

105.—This article has appeared elsewhere. See The Journal of September 13, ¶92, p. 652. See also ¶163 in this issue.

111. **Report of the San Francisco Board of Health.**—The report of the president of the San Francisco Board of Health to the mayor is a criticism of the conduct of that official in regard to the plague cases occurring in that city.

114. **Gonococcal Peritonitis.**—Barbat reports a case to show that the gonococcus may produce serious general peritonitis and that the rather common idea that has been held that gonococcal infection amounts to but little in the abdominal cavity is an error. The culture tests from the tissues show the colon bacillus, but he does not think they were the cause of death as they were not found in the pus removed during life. All pus, he thinks, should be considered as dangerous in the peritoneal cavity.

119. **The Prognosis of Myopia.**—The relation of corneal curvature and the prognosis of myopia are insisted on by Valk, who says: "It seems to me that if we accept the relation between the curve of the cornea and the refractive condition and that the majority of our cases will show a shorter radius in both meridians than the normal curve, then we have some reason for the statement that in myopia of any degree if the radius of curvature is less than 7.65 mm. we have a case of refractive myopia and not an elongation of the eyeball. That the prognosis will be, in all reasonable possibility, that the myopia will not increase. Then, with full correction, our patients may continue their studies or use of the eyes with every prospect of good and useful vision. Furthermore, that with a reduced curve, showing a normal or longer radius, with any degree of myopia, then we have for consideration a case of axial myopia that may tend to increase even to serious impairment of sight. These cases must have full correction of the myopia with an examination of the refraction and glasses every six months or a year. If in time we detect any increase in the myopia then our patients must be cautioned in the use of the eyes, but a decided increase will call for the use of atropin, if necessary, and the entire cessation of the use of the eyes at any work calling for close application, until the refraction remains stationary for at least a year. Hence in this class of cases the close observation so frequently urged upon the profession by our many writers is very necessary and urgent; while in the cases of refractive myopia we may allow the use of the eyes, within reasonable limits, with confidence that we are dealing with an innocent myopia which will give useful vision during life."

132. **Ocular Muscle Errors.**—The effects of muscle insufficiency are noticed by Parker, who remarks that they have no one pathognomonic symptom. The headaches may be somewhat characteristic, extending to the top of the head and finally settling in the back of the neck, whereas refractive errors usually cause only frontal headache. For small degrees of deviation either upward or outward the use of correcting prisms may suffice. Slight deviations outward and upward more often give symptoms than a small deviation inward, but are more amenable to treatment. He does not claim that all headaches are ocular, but shows that in muscular imbalance, as in astigmatism, there may be a considerable chain of unfavorable symptoms.

133. **Anesthetics.**—Whinery gives a number of hints in regard to the administration of anesthetics. He says, first scrub one's hands with soap and water, which is especially necessary in operations about the head and neck. Sterilize the instruments. Always use fresh anesthetics and keep both

chloroform and ether away from gas flame. Have for emergency a hypodermic syringe in good working order, with strychnin, atropin, and nitroglycerin tablets, also nitrite of amyl and ammonia water. He thinks with more experience we will have less need of the tongue forceps. It is a good plan to have normal salt solution of the proper temperature and apparatus for giving it convenient. The hypodermic administration of 1/20 or 1/30 of a grain of strychnin in a feeble patient may be of service. He prefers with ether the slow method, with the cone at first some distance from the face, watching the pupils and muscular condition and the reflexes closely as well as the respiration. The pulse can be felt in the temporal or facial artery conveniently. It is often of service to intermit the anesthetic for a few minutes, especially when there is a tendency to cyanosis. With chloroform he always advises the slow method. He prefers the simple Esmarch's inhaler. It is his practice in the second stage of chloroform anesthesia to hasten the process by slightly increasing the amount and excluding a little more of the air. When this stage is passed, one can keep the patient under with a smaller amount of chloroform. A fall of the pulse to 60 is not alarming, but if it varies or becomes irregular it is wise to intermit the anesthetic or change to ether; the respirations are not so satisfactory as those under ether. There should be little cyanosis, if any, and marked duskiness of the face shows the patient is not getting sufficient air. The vomiting which sometimes is troublesome is usually caused by letting the patient partly come out from under chloroform. With ether you can check this by pushing the anesthetic; this can not so well be done with chloroform. No one should allow the operator to urge him to push the anesthetic to a dangerous extent. Where there are no contraindications his practice is to begin with chloroform and change to ether when the patient is well under the influence and he has never had any accident while starting an anesthetic in this way. The only danger from the heart in the ordinary anesthesia is in cases of muscular degeneration, and with a weak heart and in nervous apprehensive patients chloroform is most dangerous. With lung troubles ether is contraindicated. Children are often quite susceptible to the poisonous influence of chloroform, and he does not hold to the view that it is a safer anesthetic with them. It is less likely to produce kidney trouble, and he remarks that any anesthetics are unsafe in marked anemic conditions. With a large empyema encroaching on one side of the chest we should use caution with the anesthetics. A very small amount will usually suffice, but rectal work requires, perhaps, most anesthetic. To prevent the after-effects of vomiting and nausea he says use as little of the anesthetic as possible, and allow the patient to inhale the vapor of dilute acetic acid or vinegar before coming out from the anesthetic, and move him about as little as possible during and after the operation. Place the patient on the bed with the head only slightly raised. Wash out the stomach if much mucus has been swallowed and if vomiting has been prolonged, and withhold food after operation, and give nothing but hot thin liquid in small quantities; keep the temperature of the room uniform; turning the patient well on his side before coming out from under the anesthetic has been recommended to prevent swallowing of mucus and saliva, coughing is thus prevented and vomited matter is more easily expelled. The anesthetist should stay with the patient until there is no doubt of his coming out safely. The danger signs are sudden dilatation of the pupils, shallow, sighing respiration, absent, or irregular or intermittent pulse, sudden paleness or lividity. When these occur stop the anesthetic at once, stand the patient on his head, begin artificial respiration, if necessary, use hypodermics of strychnin and nitroglycerin, divulse the sphincter ani, give inhalation of ammonia or amyl nitrite, and see that the tongue has not fallen back so as to interfere with the free access of air to the lungs. Shock, which sometimes occurs in operation, must be treated with reference to its cause. There is very little gained by pumping strychnin and nitroglycerin into a patient who has lost a large amount of blood. Anesthetics and their administration should be added to every medical curriculum and every student have a practical training in this line.

142. **X-Rays.**—Beck uses the x-ray considerably as an after-treatment after surgical operations with good effect and gives some suggestions as to its employment. He would expose for five minutes at first and after a week for ten minutes. If, after a third exposure, two weeks after the first exposure, no reaction has been shown, the patient apparently is not liable to have an idiosyncrasy and may be irradiated every second or third day, and at last daily until intense reaction shows itself. During the tentative exposures the distance of the tube should be four inches; later it may be one inch only. In some cases he has seen it used in direct contact with no harm. In cases of malignant disease it is improper to use a shield as the influence of the rays is wanted to extend as much as possible. During the intervals he would use xeroform salve (1 to 10 lanolin).

155.—This article appeared in The Journal of August 30.

163.—See ¶105.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), September 20.

1 *A Discussion on Beri-beri. Patrick Manson, E. R. Rost, L. W. Sambon, Ronald Ross, and others.
2 Enteric Fever in Sierra Leone—Not Yet Endemic? F. Smith.
3 The Climate and Diseases of Bangkok. P. A. Nightingale.
4 *A Discussion on Dysentery. Andrew Duncan, W. J. Buchanan, Leonard Rogers, Patrick Manson, and others.
5 Sanitary Work in West Africa. M. Logan Taylor.
6 Heat Apoplexy. Edward Henderson.
7 The Prophylaxis of Sunstroke. Andrew Duncan.
8 *A Discussion on Yellow Fever. James Cantlie, G. C. Low, and others.
9 Malta Fever. P. W. Bassett-Smith.
10 Malta Fever in the Canaries. Brian Melland.
11 The Geographical Distribution of Malta Fever; and the Value of Splenic Enlargement as a Test of Malarial Incidence. James A. Hislop.
12 Kala-azar as an Analogous Disease to Malta Fever. Charles A. Bentley.
13 Filariasis in Sierra Leone. W. T. Prout.
14 *Note on Trypanosoma Occurring in the Blood of Man.* J. Everett Dutton.
15 A Preliminary Suggestion for the More Systematic Study of Typhocoloid Fever. Albert S. Grunbaum.

The Lancet (London), September 20.

16 The Present Position of Chemical Physiology. W. D. Halliburton.
17 Acute Infantile Broncho-pneumonia (Broncho pneumonitis). John L. Steven.
18 *Occlusion of the Lateral Sinus and Internal Jugular Vein an Essential Part of the Method Employed by Nature, and by the Surgeon in Imitation of Nature, for Arrest of Acute General Infection Having Its Origin Within the Temporal Bone. Charles A. Ballance.
19 A Note on Albinism, with Especial Reference to Its Racial Characteristics Among Melanesians and Polynesians. C. G. Seligman.
20 *Persistent Hereditary Edema of the Lower Limbs. H. D. Rolleston.
21 *Mucin and Malignancy: Facts and Theories. William Stuart-Low.
22 The Cancer Problem. W. V. Shaw.

Presse Medicale (Paris), August 23 to September 13.

23 (No. 68.) L'Orthopédie. P. Villemin. Historical Sketch.
24 *Sterilization of Books. Barbe.—Désinfection des livres par les pulvérisations du formol du commerce.
25 (No. 69.) *Insuffisance hépatique aigue. L. Lavastine.
26 L'Arrhénal. *Dans le traitement des fièvres palustres en Algérie.* A. Cochez.—Dans la grossesse (pregnancy) compliquées de paludisme. Fontoynont.
27 (No. 70.) Etude graphique des mouvements respiratoires. Letulle and Pompilian.
28 De la broncho-pneumonie gangréneuse des pneumokonioses. G. Rosenthal.
29 *Traitement de l'hémorrhagie chirurgicale de l'amygdale E. Escat.
30 Dosage of Mercurial Preparations. Barthélemy, Lafay and Lévy-Bing.—Dose efficace moyenne journalière de quelques injections mercurielles solubles.
31 (No. 71.) *L'urobilinurie. A. Gilbert and M. Herscher.
32 *Du moment de l'intervention chirurgicale dans les ictéres d'origine lithiasique. A. Coyon.
33 (No. 72.) **La tuberculose traumatique.* E. Mosny.
34 (No. 73.) *Les lésions appendiculaires dans les autopsies banales. Tuffier and Marcland.
35 Etude historique sur l'exploration externe du tube digestif. L. MacAuliffe.
36 Quel est le traitement de choix de l'appendicite? Savariaud.
37 (No. 74.) Traitement des phlegmasies mammaires par la réfrigération. Bonnaire.
38 Chirurgie réparatrice du varicocèle. L. Longuet.
39 De la valeur comparée des médications thyroidiennes. Briquet.

Revue de Chirurgie (Paris), September.

40 *Cas de désarticulation inter-ilio-abdominale. Procédé à lambeau interne (internal flap). Savariaud.

41 Abcès périgastrique et hépatique avec perforations stomacales par traumatisme. Operation. Guérison. A. Valence.
42 *Contribution à l'étude des fractures de l'astragale. L. Ombrédanne. (Commenced in August number.)
43 *De l'ectopie congenitale du rein (kidney). Considérations chirurgicales. X. Delore.

Der Frauenarzt (Dresden), xvii, January to July.

44 (No. 1.) Zur Aetiologie der Hyperemesis gravidarum. C. Lederer.
45 Preparing for Obstetric Operations in Country Practice. Weber.—Vorbereitung auf geburtsh. Operationen auf dem Lande.
46 (No. 2.) *Uebernormale Fettansatz im Klimacterium. L. Furst.
47 Beobachtungen betreffend Yohimbin. Schalenkamp.
48 (No. 3.) Ueber eine neue Leibbinde (abdominal support). Freudenberg.
49 Goat's Milk. R. Stolle.—Ziegenmilch.
50 (Nos. 4 to 6.) Ueber Aetiologie und Behandlung der postpuerperalen Erkrankungen. J. Kalabin.
51 Reform Dress for Women. Freudenberg.—Zur Reform der Frauenkleidung.

Muenchener Med. Wochenschrift, September 2 and 9.

52 (No. 35.) Ueber das Wesen des Diabetes. O. Hess.
53 Zur hämolytischen Wirkung des normalen Menschen-Serums. N. Hahn.
54 *Die pernasale Tubage. F. Kuhn.
55 *Metastases in the Bones in Case of Tumor of the Thyroid Gland. R. Wagner.—Zur Kenntniss der Knochenmetastasen bei Schilddrüsentumoren.
56 *Beitrag zur Gelatinbehandlung der Melaena neonatorum. E. Fuhrmann.
57 Ein neuer Bewegungs-Apparat. O. Vulpius.
58 Ueber ein einfaches Bakterien-Filter zur Filtration kleiner Flüssigkeits-Mengen. W. Silberschmidt (Zurich).
59 *New Means to Prevent and Cure Decubitus. Sträter.—Ein neues Mittel gegen D.
60 Beitrag zur unblutigen Phimosen-Behandlung. Orlipski.
61 Physician and Accident Insurance Laws. W. Müller.—Arzt und Unfallgetze.
62 Impaired Working Capacity. L. Hoeflmayr.—Teilweise und veränderte Arbeitsfähigkeit.
63 (No. 36.) Behavior of Certain Glucosides in Animal Body. A. Falck.—Ueber das Verhalten einiger Glukoside, sowie über die Entstehung gepaarter Glukuronsäuren im Tierkörper.
64 Influence of Levico Water on Metabolism. E. Schreiber.—Einfluss des Levico Wassers auf den Stoffwechsel.
65 Ipecac in Dysentery. J. Strasburger.—Beitrag zur Behandlung der Ruhr mit Radix Ipecacuanhæ.
66 *Das Heroinum hydrochloricum als Anaphrodisiacum. A. Strauss.
67 Comparative Tests of Commercial Preparations of Yeast. R. Rapp.—Die Dauerhefepräparate des Handels.
68 *Action of Atropin on the Intestines. O. Ostermaier.—Zur Darmwirkung des Atropins.
69 Zur Frage der Uterus-Ruptur in frühen Monaten der Gravidität. K. Kober.
70 Thirty-pound Lipoma. H. Pfeiffer.—Ein Riesenlipom.
71 Zur akuten Formalin-Vergiftung (intoxication). A. Gerlach.
72 *Rumination in Man. L. R. Müller.
73 Bacteria That Store Nitrogen, and Their Significance in Agriculture. Jacobitz.—Ueber Stickstoff sammelnde Bakterien.
74 The Concentration Camp at Metebank. L. Hoenigsberger.—Das Konzentrationslager Merebank (Natal).
75 *The Belgian Circular Warning Against Venereal Disease.

Wiener Klinik, xxviii, January to July.

76 (No. 1.) Treatment of Gonorrheal Urethritis in Men. M. von Zeissl.—Behandlung des männlichen Harnröhrentrippers.
77 (No. 2.) Achievements and Present State of Organotherapy. V. Korczynski.—Errungenschaften und gegenwärtiger Stand der Organotherapie.
78 (Nos. 4 and 5.) Treatment of Complications of Gonorrheal Urethritis in Men. M. v. Zeissl.—Die Complication des Harnröhrentrippers und ihre Behandlung.
79 (No. 6.) Value of Tuning Fork in Otologic Diagnosis. A. Bing.—Die otologische-diagnostische Verwerthung der Stimmgabel.
80 (Supplement Number.) Erkrankungen der Respirations-Organe der Thyreoidea und der Thymus. A. Monti (212 pages).

Wiener Klin. Wochenschrift, August 7 to September 11.

81 (No. 32.) *Relations Between Structure and Function of the Spleen. K. Helly.—Wechselbeziehungen zwischen Bau und Function der Milz.
82 Bemerkenswerther Fall von Neurofibromatosis. C. Adrian.
83 Report of Six Cases of Premature Delivery by Aid of Knapp's Elastic Metal Bougie. A. Scheib.—Künstlicher Frühgeburt mittelst elastischer Metalbougie nach Knapp.
84 (No. 33.) Measurement of Blood Pressure in Man. S. Federn.—Ueber Blutdruckmessung am Menschen.
85 Ueber anreicherung (enriching) der Tuberkelbacillen im Sputum (nach Hesse). R. Königstein.
86 (No. 34.) *Zur Technik der Nearthrosenbildung bei ankylosirten Gelenken. D. Pupovac.
87 Beitrag zur Casuistik der Syringomyelie und über die bei dieser Krankheit vorkommenden Hautstörungen (cutaneous disturbances). P. Fleger. (Commenced in No. 33.)
88 Ueber die Reaction des Prostatasecretes bei chronischer Prostatitis. Pezzoli and Lohnstein.
89 (No. 35.) Diagram of Movements of Muscles of the Eyeball. Elschnig.—Diagramm der Wirkungweise der Bewegungsmuskeln des Augapfels.
90 (No. 36.) Fall von Sympathicusresection gegen Glaukom. K. Hoor.
91 *Ueber postoperatives Irresein (insanity). A. Pilcz.
92 *Klinik der Esophagoskopie. L. Harmer. (Commenced in No. 35.)
93 *Significance of the Optic Thalamus. M. Probst.—Ueber die Bedeutung des Sehhügels.
94 Obstetric Paralysis of the Arm. A. Schuller.—3 Fälle von Entbindungslähmung am Arme. Ueber die Beziehung dieser Lähmungsform zum angeborenen Schiefhals.
95 Prophylaxe der venerischen Krankheiten durch Errichtung von Heil- Behandlungs- und Pflegestätten. E. Finger.—Address at Preventive Conference.

Gazzetta degli Ospedali (Milan), August 7 to September 7.

96 (No. 90.) *Dell' uso della Piridina nella pertussis. M. V. Cacchiole.
97 *Di un nuovo metodo di cura della parotite epidemica. E. Grande.
98 *Cura radicale del Ischuria da ipertrofia prostatica, mediante la cauterizzazione della prostata della via rettale. A. Negretto (Lodi).
99 L'ipoclorurla nelle malattie acute e croniche. G. Campanella.
100 Determinazione dell'acido fosforico in clinica. E. Pittarelli.
101 (No. 92.) Sulla plastica col grande omentum. A. Soraci.
102 (No. 93.) Miners' Disease. C. Momo.—La malattia delle mine.
103 Altri 6 casi di febre miliare fulminante. C. Ernesto.
104 *Ecchymosis on Dorsum of Foot After Fall on the Feet. T. Fiori.—Macchia ecch. del dorso del piede da caduta, etc.
105 (No. 96.) *Considérazioni sopra 10 splenectomie per splenomegalia malarica associata ad ectopia. R. Schwarz.
106 *Sull' operazione di Talma. F. Carini.
107 (No. 99.) Contributo alla prova di Widal nella febbre tifoide. A. Migliorato.
108 *Contributo allo studio degli aneurismi. B. Romano.
109 Del "reumatismo blenorragico." V. Utili.
110 Contributo alla epidemiologia e alla profilassi della malaria in alcune zone dell' Italia Meridionale. G. Gilblas.
111 (No. 102.) *Contributo allo studio della tuberculosi latente delle tonsille e delle vegetazioni adenoidi. C. Tarchetti.
112 *Sul valore della citodiagnosi. Ibid.
113 La peste bubbonica. M. Salvatore.
114 Mastite e allattamento (lactation). E. Piperno.
115 Negative Results of Blister Test. Germani.—Sulla prova del vescicatorio.

1. **Beri-Beri.**—In this article Manson takes the stand that, while beri-beri is clinically a multiple peripheral neuritis and possibly confounded with many other forms of peripheral neuritis in the tropics, it is the result of a specific toxin which is produced by a living germ, although this has not yet been satisfactorily ascertained by research. One proof of this is that the disease can be introduced into a virgin country and there spread. The cause is capable of being transported and of multiplying, and there are many instances of this fact, some of which he gives. It operates in some culture medium and that this is located outside the human body is shown by the fact that no germ can be detected in the victims of the disease. He holds, however, that it does not enter the human body in food and gives in support of this view the experience in certain Indian jails and hospitals. In this respect he is not in accordance with certain views that have been held, but he feels confident that he is correct. He also maintains that it is not conveyed in drinking water. In two institutions side by side supplied from the same source, one may have the disease and the other be exempt. Unfortunately, we have nothing yet to show what the toxin is or what germ produces it or how it gains access to the body. Whoever succeeds in solving these problems will confer an immense benefit on the multitude of his fellow men.

Rost's views were abstracted in a recent number of this journal from his article in the *Indian Medical Gazette.*

Sambon, while not believing in the rice theory of beri-beri, holds that food may become a medium of infection. He disagrees somewhat with Dr. Manson's views and holds that the specific agent of the disease lives within the patient's body and attacks the peripheral nerves, basing this assumption on the clinical symptoms and the anatomic data of the disease. While we do not know the primary cause there are many important epidemiologic facts ascertained, and he suggests on the experience so far collected as provisional measures for its prevention that: "1. Men who have recently suffered from beri-beri should not be allowed to join coolie gangs, because they would most probably suffer from a relapse of the disease, and, possibly, become a source of infection to others. 2. Patients suffering from beri-beri should be isolated in beri-beri countries, because, under certain as yet undetermined conditions, they are undoubtedly a cause of further infection. 3. Open wounds, ulcers and abrasions of any kind should be most carefully cleansed and dressed in those who are obliged to associate with beri-beri patients. 4. The diet supplied to cooli gangs and to inmates of collective dwellings should be va and rich in nitrogenous ingredients. The rice should be of good quality, recently decorticated, properly stored, carefully washed and thoroughly cooked. Whatever may be the cause of beri-beri, we can not deny that diet seems to have a potent influence on its prevalence. Takaki's dietetic reforms in the Japanese navy to overcome beri-beri have proved as great a triumph as those introduced by Blane into the English navy in 1795 to combat scurvy—a disease in many ways comparable to beri-beri."

Ross reports some instances of the finding of arsenic in the hair of beri-beri subjects. In all the cases they were in the early stage of the disease, while the negative cases were largely of over one month's duration. The presence of arsenic in these cases may be a mere coincidence, but still he thinks it may point to a real connection between the poison and the disorder, which is very much like chronic arsenical poisoning.

4. **Dysentery.**—Duncan recognizes the fact that dysentery may present itself in several different types with different causes. He opposes the view to some extent that the amebic type is the typical tropical dysentery; in fact, in India, he holds, the ameba has very little to do with the disease, but is merely a concomitant. From his study of the affection he deduces the following as regards the prognosis of the disorder: "In the acute forms, (*a*) as regards the stools, a good result is the rule where the blood and mucus disappear and the ordinary stools re-establish themselves; of unfavorable prognosis are: 1, where the stools consist of a blackish-red or blackish fluid, with a horribly putrescent odor, and bits of gangrenous tissue; I have never seen a patient who passed this stool recover; 2, where during the course of the disease fluid fecal matter is from time to time passed, the import is rather unfavorable, inasmuch as the disease is liable to be extensive, affecting the upper part of the large, as well as even the small intestine; 3, Sir Joseph Fayrer also states that the prognosis is very bad where porridge-like stools are passed with a very fetid odor, without mucus or blood. (*b*) As regards the general symptoms, the gravity of the case is to be judged from the aspect of the patient. Where the features become shrunken, with the supervention of a cold sweat, the cessation of abdominal pain, and the exhalation of a fetid odor from the body, the worst is to be feared. Persons over 50 also are handicapped by their age; other unfavorable symptoms are hiccough, sordes, suppression of urine, with involuntary passage of the contents of the bowel. In chronic dysentery the prognosis is by most authors considered unfavorable; but Dr. Stephen Ward, formerly physician to the Dreadnought Hospital, as the result of his large experience, stated that recovery took place in most of the cases where they have been properly treated. This result was the usual one in my experience while resident at this hospital. Lastly, in scorbutic dysentery the prognosis is extremely bad, unless the scorbutic element be recognized." For the treatment he finds ipecac one of the reliable agents and where it is not tolerated an excellent substitute is found in cinnamon in dram doses in a bolus night and morning. The saline treatment he has had no experience with in India, but hears it well spoken of. In other parts of the world, South Africa and elsewhere, the experience has been somewhat different, ipecac being less reliable. This he holds as an argument that the diseases are not the same. For chronic dysentery he has employed two methods, one by bismuth with Dover's powder, 20 grains of the former to ¼ gr. of the latter. Secondly, moderate doses of castor oil, also with opium suppositories are used, and the third plan used by the late Dr. Ralfe was the administration of 20 minims of oil of turpentine, which he was inclined to consider best of all.

Buchanan finds the dysentery of the India prisons almost altogether bacillary and dwells particularly on its seasonal character, its communicability and the need of early recognition and prompt and effectual treatment. Hospital treatment is the most successful; outpatient treatment is less advantageous. The treatment which he seems to favor most is sodium sulphate in cinnamon or fennel water, four, five or six times daily. He has notes of over 1100 cases thus treated with only nine deaths.

The relation of dysentery to liver abscess as shown by experience in the Medical College of Calcutta is discussed by Rogers. The first point he mentions is the relation of the ameba to tropical liver abscess, and he finds that dysentery has been precedent in a very large proportion of cases, and can not be excluded in the remainder and that the dysentery of the tropic or amebic liver abscess is of the amebic variety. In fact, dysentery is constantly or almost constantly associated with tropical abscess of the liver, and as he seems to believe directly related. On studying the statistics he finds there is no season of special prevalence of the abscess, which is in accord with the theory that it has a relation with the amebic dysentery, which, unlike the catarrhal form, has no seasonal incidence. Alcoholism is a very common thing in these cases and seems to be an important predisposing cause. He reviews the symptomatology and pathology in some detail and calls attention particularly to the value of leucocytosis in the diagnosis and the action of quinin on the ameba. His conclusions are summed up as follows: "1. The ameba is constantly found in an active condition in the wall of tropical abscess of the liver, although frequently absent from the pus in its cavity. The ameba is the only organism constantly found in such abscesses. 2. Staphylococci and other pyogenic bacteria are absent from the pus in the great majority of cases when the abscess is first opened. 3. In cases of which a complete record is available there is either a history of dysentery or lesions of this disease are found postmortem in over 90 per cent. of the cases, and it can not be certainly excluded in the remainder. 4. The dysentery precedes the liver abscess or lesions in the large bowel of an antecedent date, and are found postmortem in 95 per cent. of cases. 5. The form of bowel disease associated with the large tropical or amebic abscess of the liver is amebic dysentery. 6. Severe sloughing forms of catarrhal dysentery may be associated with small multiple pyemic abscesses, which is a totally distinct condition from tropical or amebic abscess, and is very rarely recognized during life. 7. Quinin solutions rapidly destroy the ameba, and may be used with advantage in washing out liver abscesses after they have been opened. They are also worthy of a trial as injections after aspiration of the pus as a possible curative measure, especially in such cases as are found to be free from the ordinary pyogenic organisms."

8. **Yellow Fever.**—The results of the American Yellow Fever Commission are reviewed by Cantlie, who also notices several other diseases which seem to be allied to yellow fever, such as Weil's disease, acute yellow atrophy of the liver, bilious remittent, bilious typhoid and hemoglobinuric fever.

From a comparison of pernicious malaria and yellow fever, Low concludes that it is of extreme importance to examine the blood carefully when called on to decide whether the case is one or the other. At the commencement of the epidemic, when there is a doubt as to the nature of the disease, the later progress of the epidemic would probably clear up the diagnosis of yellow fever. The increase of large mononuclear leucocytes in the blood would form a diagnostic point of considerable importance in fever or malaria, though how reliable this may be is not quite fully ascertained.

18. **Infection from Disease of Temporal Bone.**—The paper by Ballance considers the general subject of infection of the cerebral sinuses from disease of the temporal bones and his conclusions are that the surgeon, from his examination of the case, must come to a fair idea as to the patient's condition, whether it be an acute systemic infection or a systemic disturbance depending on local processes. If we are in doubt the matter must be cleared up by careful observation as early as possible during the progress of the operation on the temporal bone. The operation on the jugular vein should be undertaken: 1, in acute pyemia and acute septicemia whether the sinus is clotted or filled with fluid blood, and 2, where the sinus wall is gangrenous or its contents are putrefying, unless it is perfectly clear that on both sides of the area of inflammation of the lumen of the sinus is completely blocked by noninfected thrombi. 3. If it is proved or even suspected that the blood in the jugular vein is in part or wholly clotted, and

4, if the jugular vein is thrombosed. It is seen that not only general systemic infection, but certain local conditions demand operation. Having dealt with the vein the operator returns to the sinus region and removes bone so as to expose the sinus toward the torcular for a distance of at least three-quarters of an inch beyond the area of inflammatory change and the same treatment is adopted on the other side of the inflamed area, the bone being removed in some cases and probably better in all as far as the bulb, so that the whole area of possible infection of sinus and vein is exposed in one continuous wound. If one continuous wound is not made in lateral sinus pyemia the dangerous area of the bulb is not laid open and the presence of even a small particle of putrefying clot may determine an extension of the infective clot along the inferior petrosal sinus to the cavernous sinus. It is impossible to deal with the sinus as with the vein by removal, and, therefore, the obvious proceeding is to slit up the sinus, if necessary from torcular to bulb so that the whole area of infected inflammation may be exposed and treated. In the selection of cases is where the judgment of surgeons must come in play. It matters not whether the condition has had its origin in acute or chronic inflammation. The proper surgical treatment by free incision or ablation is not only not dangerous, but beneficial and curative. Rapidity and skill of execution is as urgently needed as in general septic peritonitis from perforation or hemorrhage from rupture of the spleen or rupture of tubal pregnancy.

20. **Hereditary Edema of the Lower Limbs.**—Rolleston reports the case of a brother and sister both subject to a peculiar form of edema of the legs which was persistent as long as they led an ordinary life, and was more marked after exercise or a warm bath, but disappeared after rest in bed for a few days. It was only troublesome from the weight and size of the legs, there being no pain. The mother had suffered for 35 years from the same condition. There was no history or trace of specific infection, and no evidence of hemophilia. When the limbs were kept warm the skin was normal in color, but the circulation was feeble, pressure leaving an anemic area for a longer time than normally. The edematous skin pitted fairly readily, and was distinctly cold to the touch. There was no apparent structural change or thickening even in the mother, nor was there tenderness on pressure. There was no puffiness of the face, hands or any part of the body except the lower extremities, and no recognized cause for the edema in any of the three patients. The heart was normal and there was no anemia, but evidence of what was properly called a feeble circulation, and at birth both were blue babies and were always subject to chilblains. He suggests whether there may have been some hereditary defect or peculiarity of the small blood vessels allowing extensive transudation to occur on very slight provocation in these cases.

21. **Mucin and Malignancy.**—The point made in Stuart-Low's paper is that it is possible that mucin has a counteraction against malignant disease. He calls attention to the fact that cancer is seldom met with in any situation along the mucous membrane of the small intestine and lungs, both of which have an ample supply of mucin secretion. The same is true of the urinary tract, while in the mammæ where there is no mucin whatever it is frequent, and in the uterus cancer most generally affects the portion that is least supplied with mucous glands. Frequent pregnancy is a strong predisposing cause, and it produces a hypomyxiatous condition in the hypertrophic uterus at the menopause. He remarks also that in the 15 cases of cancer which he tabulates, as observed during the last few months, nearly all show excessive tobacco use and also the consumption of a large quantity of salt, both of which tend directly to bring about the diminution of mucin. He has tried mucin in malignant disease in six of these cases, all in the advanced stages before resorting to its use, with improvement in all, though none have been thoroughly cured. Of course tobacco and salt were prohibited.

24. **Disinfection of Books with Formalin Spray.**—Barbe found that books disinfected with the fumes of formic aldehyd were still able to infect guinea-pigs with tubercle bacilli previously deposited on certain leaves. He then modified his procedure and found that it was possible to thoroughly disinfect books by the following method: The book was suspended from the cover of an airtight box by a pair of forceps holding the cover opened backward, thus allowing the leaves to spread like a fan. He then sprayed it from below with an ordinary Richardson atomizer, using the same amount of formalin, that is, 5 gm., as the box was about a yard square. The nozzle of the atomizer was inserted in a hole in the bottom of the box. As soon as the fluid had all been sprayed into the box, the hole was plugged and the box left undisturbed for twenty-four hours. No infection resulted in guinea-pigs inoculated with tubercle bacilli that had been deposited on the leaves as in the previous experiments.

25. **Acute Insufficiency of the Liver.**—Six cases are described and a number of others are reviewed. The syndrome occurred in the course of typhoid fever or pneumonia, and is so unusual that some were diagnosed as measles and others peritonitis from perforation. The principal symptoms are the subnormal temperature, the green vomiting and the erythema. Besides these there are usually urobilinuria, pale diarrhea, painful tumefaction of the liver, hemorrhages from the mucosæ, nausea, hiccough, delirium, hallucinations, nocturnal agitation and dread of death. The autopsies of each case showed the liver in such an advanced stage of granular-fatty degeneration that the tissue looked like lace.

29. **Treatment of Hemorrhage in Operations on the Tonsils.**—Escat has been successful in arresting threatening hemorrhage by suturing the anterior and posterior pillars together with a curved needle after removal of the tonsil. In case this proves insufficient he introduces a wad of cotton the shape and size of the little finger, working it beneath the two stitches in the pillars. The cotton can be impregnated with suprarenal extract, hydrogen dioxid or a 10 per cent. solution of antipyrin or a 2 per cent. solution of ferropyrin. If adrenalin hydrochlorate is used, the 1 per 5000 solution is strong enough, and none should be allowed to be swallowed. If these measures fail he inserts a laryngeal tube, lengthened by a tube brought out through the mouth. The patient may be fed through a rubber tube introduced in the esophagus. The space around the two tubes should be thoroughly packed with gauze.

31. **Urobilinuria.**—Gilbert has established the almost constant absence of urobilin in the blood in severe cases of urobilinuria. Also that urobilinuria does not signify insufficiency of the liver, as previously supposed, but merely cholemia. The urobilin is of renal origin, and is a sign that the bile pigments are circulating in the blood. It may occur with or without icterus and choluria.

32. **Time to Intervene in Icterus Due to Calculi.**—Coyon agrees with Mongour that the way to determine the proper time for intervention is by daily percussion of the liver. When this organ is hypertrophied in such cases it indicates that it is striving to defend itself. When it commences to retrogress, accompanied by polyuria and azoturia, the process is evidently on the decline and recovery is near. On the other hand, if the liver commences to retrogress without these other symptoms, it is a sign that the organ is unequal to its task and is giving up the struggle. This is the moment for surgical intervention as the patient can not recover if left to his own resources. If systematic percussion has not been practiced, the presence of abnormal bile pigments in the serum and urine will prove a valuable aid. When the urine contains the normal pigments, it is unnecessary to examine the serum, but in the opposite case, he draws 10 to 20 gm. of blood from a vein and sets it aside in slanting test tubes until completely coagulated, when he examines the serum chemically and with the spectroscope. If the pigments in the serum are modified the conclusion is inevitable that the liver cells are functioning abnormally and the obstacle should be removed. Chills and fever, indicating infection, are not an indication for operating in every case. Many primary and secondary infections of the liver may heal spontaneously or under medical treatment. The changes in the size of the liver and in its biligenic function are the main points in the prognosis.

33. **Traumatic Tuberculosis.**—Mosny believes that a traumatism which arouses a latent tuberculous lesion inflicts almost as much of an injury on the victim as if a healthy person had been rendered tuberculous by the traumatism. The French courts have allowed industrial damages of 1/5 to 2/3 of the victim's previous wages in such cases. Clinical experience seems to show that a traumatism remote from the primary tubercular focus does not cause a local tuberculosis unless there was a previous latent tubercular lesion at the point. This assumption is confirmed by the fact that a broken bone usually heals in a consumptive without any tubercular lesion developing at the point. Traumatism affecting the thorax accelerates the course of established pulmonary tuberculosis. Hemoptysis, pneumonia, broncho-pneumonia and pleurisy following a traumatism of the thorax in subjects hitherto considered healthy, are manifestations of tubercle bacillus infection from the start. The traumatism reveals the existence of some latent focus. Lerefait of Rouen found some latent, healed tubercular focus in every one of 300 cadavers of elderly people. Traumatic pleurisy, etc., terminating in pulmonary consumption, is in reality merely the arousing of a latent tubercular focus, not the secondary tubercular infection of a simple inflammation of the lung. The hemoptysis which so frequently follows the traumatism is in itself witness to the bacillary nature of the affection.

34. **Lesions in Appendix at Autopsies.**—Tuffier illustrates a number of cases to support his assertion that lesions of the appendix are frequent which yet do not come under the head of appendicitis. The symptoms caused by them are not recognized during life. Besides true surgical appendicitis there must be other forms, more or less severe lesions, revealed by the autopsy alone; adhesions, congenital anomalies, atrophy, hypertrophy and obliteration of the appendix. In many instances the appendix appeared to be sound to the eye but the microscope disclosed evidences of chronic inflammation. The peritoneum around the appendix was found intact in only 47 out of 146 cadavers investigated from this point of view. In another series of 60 autopsies periappendicitis was manifest in 22, and in 13 it coincided with partial or total obliteration of the cavity of the appendix. In 15 others the peritoneum was intact, but the appendix was obliterated or inflamed inside. He concludes from these and other facts which he cites, that the appendix is almost invariably chronically inflamed. More or less severe acute attacks occur accompanied by perilymphangitis, and hence defensive reaction on the part of the peritoneum. If the attack is mild, the adhesions thrown up protect the organ and the attack subsides, leaving scarcely any traces. These acute attacks recur with more or less frequency and the adhesions become more and more numerous, until finally they may present the appearance left after a surgical appendicitis although the individual in question may never have had his attention called to the organ by any symptoms. [Riedel's recent article in the *Berliner klin. Wochenschrift* reaches nearly the same conclusions after microscopic examination of 313 inflamed appendices. Acute inflammation of the appendix, he states, can develop only when the organ has long been chronically inflamed. There is no dulness over it so long as it is non-adherent and adhesion is by no means the inevitable consequence of a serous, purulent or even a fetid inflammatory process in the appendix. As long as the appendix floats freely dulness may be absent, and the diagnosis uncertain.—Ed.]

40. **Internal Flap Method of Inter-Ilio-Abdominal Disarticulation.**—Savariaud describes a case of an hour-glass shaped tumor of the great sciatic notch, partly in and partly outside of the pelvis. Such a tumor simulates an osteosarcoma of the pelvis and can be differentiated only by radiography in some cases. When it invades the vessels and nerves of the extremity, inter-ilio-abdominal disarticulation may become necessary, and the best method is that which provides a long flap on the inside of the thigh, to substitute the soft parts of the buttocks destroyed by the tumor or suppuration. When a more conservative operation is possible, the example of Kocher and Roux must be born in mind as they have each resected the entire ilium. They not only cured their patients but the latter are able to walk without support and even stand on the operated limb, swinging the other foot. A thick fibrous membrane must have developed between the intra- and extra-pelvic muscular planes. In the personal case described the seven-year-old child died soon after the inter-ilio-abdominal disarticulation, probably from a combination of factors, the length of the operation, loss of blood, nervous shock from section of the crural, obturator and sciatic nerves, escape of cerebrospinal fluid, etc. But the case illustrates the advantages of this operation for such cases, although naturally as the last resort. He reviews 7 cases of disarticulation for an osteosarcoma with 3 recoveries and 2 for coxalgia with 1 recovery.

42. **Fractures of Astragalus.**—Ombrédanne concludes his illustrated study of this subject with an explanation of the various modes of fracture. The symptoms of a fracture of the body and neck of the astragalus are the dislocation *en masse* of the foot inwards, with or without inward reversal of the sole. This deformation is almost pathognomonic if the malleoli are intact. Fracture of the posterior tubercles is characterized by persistent impotence of the member, pternalgia or achillodynia. A fracture of the body or neck of the astragalus requires its entire removal at once. If the posterior tubercles are fractured, confirmed by radiography, and entailing inveterate achillodynia, extirpation of the torn out fragment is advisable. Under expectant treatment fractures of the astragalus lead to ankylosis or at least absolute impossibility to walk (Cases of Mollière, Monod and others). On the other hand, the results after astragalectomy are absolutely perfect (Russell, Hancock, Desfosses and others). There does not seem to be any advantage in leaving the head in place. The indications for astragalectomy are even more imperative in case of compound fractures.

43. **Congenital Ectopia of the Kidney.**—Delore remarks that an ectopic kidney is not lumbar but retroperitoneal and should be extirpated like a tumor in the mesentery or pancreas, by a laparotomy rather than through a lumbar incision. An ectopic kidney protruding into the vagina has been occasionally ablated by an accoucheur during delivery, but the size of the kidney may forbid it, its detachment is not easy, there may be more than one pedicle and the course of the vessels is almost certain to be abnormal and hemostasis difficult. Laparotomy is preferable even for these cases, aside from some urgent necessity during delivery. In a personal case reported abdominal nephrectomy was followed by drainage of the cavity, tamponing with a counter-opening at the lowest lumbar point. Post-operative broncho-pulmonary complications have been banished from his clinic since he has made a practice of this measure in all operations for the detaching of organs. At the autopsy of another case, not operated on, and diagnosed during life as intermittent hydronephrosis, the ectopic right kidney was found fastened to the anterior surface of the spine, near the second and third lumbar vertebræ. It weighed 90 gm., had two renal arteries and one renal vein. The ureter appeared to be normal. The symptoms were intermittent attacks of pain, probably due to recurring congestion and digestive disturbances, which were marked in several cases on record, including his personal case. They were so severe as to suggest cancer of the stomach, but they all vanished after ablation of the kidney. Palpation shows the rather hard consistency of the ectopic organ, its fixity, and the sensibility more acute than in case of a fibrous, cystic or fatty tumor. Pressure on it may sometimes cause radiating pains suggesting those of nephritic colic. The kidney in such cases is usually deformed and it is useless to seek for its normal shape. In some cases there has been fluctuation; in others pulsation suggested an aneurism. In some the ectopic kidney simulated a parenchymatous salpingitis. The lower end of the kidney formed a fixed, hard, sensitive, spindle-shaped tumor, extending down toward the left vaginal cul-de-sac, separated from the cervix of the uterus by a groove. It was diagnosed as a hydrosalpinx, an appendicular abscess, a tubercular mesenteric ganglion and a sarcoma of an ectopic testicle by the various writers. If the possibility of a congenital ectopic kidney is borne in mind, it

will probably be correctly diagnosed more frequently. It is usually mistaken for a movable kidney. Radiography, percussion after injection of gas, examination of the urine, tests of the permeability of the kidneys and even catheterization of the ureters are not always able to definitely decide the question. In the personal case described the ectopic kidney was detached through an abdominal incision and the condition improved for eighteen months, after which the previous pains and digestive disturbances recurred, compelling nephrectomy.

46. **Obesity Developing at Menopause.**—Furst has been very successful in keeping patients with a tendency to obesity in good health and moderate proportions by the following régime. About 100 gm. of Hunyadi Janos water before breakfast and on retiring, followed by ten minutes of self massage. Ten minutes are devoted to gymnastic exercises once or twice during the day. Fluids in moderate amounts, diet mostly vegetable, excluding potatoes and nuts, and the amount of sugar restricted. This régime must be kept up indefinitely, with the patient weighed weekly to determine the gain or loss.

54. **Pernasal Intubation.**—Kuhn's peroral tubage has been described in these columns. The tube extends from the outside into the larynx through the mouth, with a metal cap to protect it as it passes between the teeth. It has been found extremely useful, and he now announces that the same principle can be applied to intubation through the nose. A metal tube is inserted through a nostril into the larynx with very little discomfort. It has all the advantages of the mouth or peroral tube while respiration proceeds more naturally, and the curve of the tube is less acute and consequently there is less friction for the entering air. The mouth is left entirely free, and the tube can be fastened more easily. In operations on the mouth the throat can be tamponed and thus the field kept absolutely clean, while respiration proceeds naturally, and an anesthetic can be given more easily. It is impossible to conceive, he says, of a more convenient and extensive means of access to the mouth and throat, free from dread of asphyxia, aspiration, spasmodic efforts to vomit or actual vomiting. The nasal tube can be left in place after the intervention for several hours, and it is even possible to take liquid food with it still in the nose and throat. It prevents reflexes from the upper-air passages and keeps them open. The chloroform mask can be dispensed with and the narcosis can be rendered more profound at any moment with comparatively small amounts of chloroform and without interrupting the operator.

55. **Bone Metastases from Thyroid Tumor.**—Wagner describes a spindle-celled sarcoma that developed in an old parenchymatous struma. It made irruption early into the blood and a metastasis developed in the neck of the femur, which appeared to be the primary lesion as the thyroid tumor had caused no noticeable symptoms. He warns that in case of a malignant tumor in the skeleton the thyroid gland should be investigated as the possible primary source.

56. **Gelatin in Melena Neonatorum.**—The melena was idiopathic and typical in each of the three cases reported by Fuhrmann. All were treated with injection of 40 to 50 c.c. of a 2 per cent. solution of gelatin. In one the treatment was instituted late and the child died. The others promptly recovered.

59. **New Means to Prevent and Cure Decubitus.**—Sträter remarks that the ring cushions and other devices to protect a decubitus do more harm than good if the patient moves about on them, as the sore is brought against the edge. He avoids this by using a protecting pad of felt with glue on one side. A hole is cut out of it to correspond to the sore and the pad is moistened and applied to the skin, to which it sticks permanently as long as desired. Another advantage is that it does not incommode the patient like a thick cushion to which he is unaccustomed. He has used it in 40 cases and always with the most satisfactory results and no inconveniences of any kind. The sore usually heals as soon as all mechanical irritation is removed.

66. **Heroin as an Anaphrodisiac.**—Strauss has found that heroin in 1 cg. doses every evening has a remarkable effect in putting an end to nightly pollutions. It also cured cases of sexual neurasthenia, although the effect was less prompt than in the former category. It also proved beneficial in preventing painful erections in the course of inflammatory processes or after operations. There were no by-effects from its use, not even the constipation that follows morphin. It can be administered as a powder by the mouth or in the form of a suppository.

68. **Action of Atropin on the Intestines.**—Ostermaier states that only 6 failures have been reported out of 45 cases of ileus treated with atropin. Reviewing his own and the experience of others he has become convinced that the proper mode of administering it is to commence with 1 or 2 mg. and continue with 1.5 mg. at brief intervals, possibly thirty minutes, until the desired effect on the intestines is obtained or symptoms of intoxication appear. He ranks it with iodin, mercury and quinin as one of the most important drugs at our command, but explicitly warns that it substitutes taxis, not herniotomy, in case of external incarceration. In case of ileus it substitutes treatment with opium, but not operative intervention, and the latter should never be postponed for more than a few hours unless forbidden by other reasons.

72. **Rumination in Man.**—We recently listed in our Index Müller's article describing a family in which 3 members were "ruminants." The article was widely copied in the lay press throughout Germany, and in consequence the author has received numerous letters describing similar cases in the writers' experience. Rumination, it appears, is much more common than usually supposed. The subjects do not consult a physician and strive to conceal their "bad habit" from those around them. The writers remarked that they had found the best means to conquer it is to eat very slowly, thoroughly masticate the food, and control with the will as far as possible the regurgitation of the food. Müller does not consider it a morbid phenomenon.

75. **The Belgian Circular Warning Against Venereal Disease.**—The Belgian government has issued a pamphlet of practical instructions "for the use of officials and of the public to prevent the appearance of transmissible diseases and to combat their dissemination." The chapter in regard to venereal diseases is considered by the Germans a most important progress in the crusade against venereal disease. It demonstrates that it is possible to throw the light of science into the remotest dark corners of this matter without offending the public ideas of morality. Syphilis and gonorrhea are each considered separately and their dangers, the modes of contagion, the necessity for treatment and the possible consequences from its neglect are portrayed in simple, forcible language, especially emphasizing the dangers of prostitution by minors. It is the first attempt of the kind on the part of any government, as Belgium was also the first to organize an international preventive congress.

81. **Relations Between Spleen Structure and Function.**—Helly is assistant superintendent of the Institute of Anatomy at Vienna. He asserts that the spleen possesses all the properties which we consider the appanage of lymph glands, but this, of course, does not exclude the possibility that it may possess still other yet undemonstrated properties. Every lymph gland has a certain circumscribed region in its charge. We thus speak of certain "regional" lymph glands, as for instance, the inguinal, axillary or retrobronchial glands. The spleen has likewise its charge, but in this case it is the entire circulating blood. As we usually attribute several lymph glands to an organ, so the spleen shares with the liver and bone marrow this supervision of the blood. Lymph glands are involved in affections of the organ under their control or of other glands in their "region," and in the same way the spleen is liable to share in any morbid process affecting the liver or bone marrow. He concludes that the spleen is a lymph gland, and in fact a "regional" lymph gland for supervision, not of an organ, but of the blood. This fundamental idea explains its functional manifestations, its task of supplying leucocytes and of protecting and purifying the blood from foreign bodies and other

duty in connection with the military maneuvers to be held at that post, and on the completion of this duty to proceed to Vancouver Barracks for duty at that post.

H. D. Corbusier, contract surgeon, leave of absence for one month granted.

Thomas Devereux, lieutenant and asst.-surgeon, will proceed from Fort Snelling, Minn., to Fort Riley, Kan., for temporary duty in connection with the military maneuvers to be held at that post, after which he will return to his station at Fort Snelling, Minn.

William J. Enders, contract surgeon, leave of absence for two months granted after October 1.

James D. Glennan, major and surgeon, member of a board at West Point, N. Y., to examine officers of the Army for promotion.

Valery Havard, lieut.-col. and deputy surgeon-general, so much of former orders as requires him to return to his proper station at Fort Monroe, Va., not later than October 15, is amended so as to direct him to proceed to Paris, France, and attend the special maneuvers in connection with troops in the field of the Medical Department of the French Army (Department of Paris), and to return to his proper station not later than October 30.

John Van R. Hoff, lieut.-col. and deputy surgeon-general, is relieved from duty as a member of the Army Medical School. On the completion of his duties with the maneuvers at Fort Riley, Kan., he will proceed to Fort Bayard, N. M., for the purpose of inspecting the General Hospital at that port and thereafter will return to his proper station in Washington, D. C.

James B. Holland, contract surgeon, member of a promotion board at Fort Leavenworth, Kan.

Henry F. Hoyt, major and surgeon, Vols., former orders so amended as to direct him to be honorably discharged, to take effect at Fort Douglas, Utah, October 10, his services being no longer required.

John S. Kulp, captain and asst.-surgeon, U. S. A., detailed a member of an examining board at the Presidio of San Francisco, vice Lieut. Thomas L. Rhoads, asst.-surgeon, relieved.

Louis A. LaGarde, major and surgeon, in addition to his duties as attending surgeon, U. S. Soldiers' Home, Washington, D. C., is detailed a member of the faculty of the Army Medical School, as professor of ophthalmology and skiascopy and lecturer on the duties of medical officers in war and peace.

Francis McCallum, captain and asst.-surgeon, Vols., leave of absence on surgeon's certificate of disability from the Department of California, extended one month.

Harry O. Perley, major and surgeon, member of a promotion board at Jefferson Barracks, Mo.

Allen M. Smith, captain and asst.-surgeon, to report in person in Washington, D. C., to Major W. C. Borden, surgeon, commanding the General Hospital, Washington Barracks, D. C., not later than September 30, for temporary duty in connection with the hospital to be established during the encampment of the Grand Army of the Republic, and on the completion of this duty to return to his proper station.

William Stephenson, major and surgeon, from duty at Fort Mason, Cal., to duty at Camp Monterey, Cal.

Ralph L. Taylor, contract surgeon, leave of absence for one month granted.

Albert E. Truby, lieutenant and asst.-surgeon, member of a board at West Point, N. Y., to examine officers of the Army for promotion.

Francis A. Winter, captain and asst.-surgeon, member of a promotion board at Jefferson Barracks, Mo.

APPOINTMENTS, PROMOTIONS, RETIREMENTS, ETC.,

of commissioned medical officers, recorded in the Adjutant-General's Office, between Aug. 15 and Sept. 15, 1902:

Regular Army, Appointments.—Colonel Robert M. O'Reilly, assistant surgeon-general, to be surgeon-general, with the rank of brigadier-general, Sept. 7, 1902.

Promotions.—Lieut.-Col. Joseph B. Girard, deputy surgeon-general, to be assistant surgeon-general, with the rank of colonel, Sept. 7, 1902; Major Edward T. Comegys, surgeon, to be deputy surgeon-general, with the rank of lieutenant-colonel, Sept. 7, 1902; Captain Henry D. Snyder, asst.-surgeon, to be surgeon, with the rank of major, Sept. 7, 1902.

Retirement.—Brigadier-General William H. Forwood, surgeon-general, Sept. 7, 1902.

Volunteers, Honorably Discharged.—Major James S. Wilson, surgeon, Aug. 15, 1902; Major William F. de Niedeman, surgeon, Sept. 11, 1902.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending September 27:

Medical Director E. S. Bogert, retired, ordered to the Marine Recruiting Rendezvous, New York.

Medical Director N. M. Ferebee, detached from the Naval Hospital, Norfolk, Va., and ordered to the Navy Yard, Washington, D. C.

Medical Director R. C. Persons, detached from the Marine Recruiting Rendezvous, New York, and ordered to the Naval Hospital, Norfolk, Va.

Medical Inspector C. G. Herndon, detached from the Navy Yard, Washington, D. C., and ordered to the Naval Hospital, Yokohama, Japan, sailing from San Francisco, October 22.

Medical Inspector G. E. H. Harmon, detached from the Naval Hospital, Yokohama, Japan, and ordered home to wait orders.

Surgeon G. Pickrell, detached from the Naval Dispensary and Naval Hospital, Washington, D. C., and ordered to the Naval Academy, Annapolis, Md.

Surgeon G. Biddle, detached from recruiting duty in the field, and ordered to the Naval Recruiting Rendezvous, Philadelphia.

P. A. Surgeon J. B. Dennis, detached from the *Brooklyn*, and ordered to the *Detroit*.

P. A. Surgeon W. M. Garton, ordered to the *Columbia*.

Surgeon T. A. Berryhill, ordered to the Navy Yard, Pensacola, Fla.

Medical Director L. G. Heneberger, detached from the *Brooklyn* and ordered to the *Olympia*.

Surgeon H. E. Ames, detached from the *Olympia*, and ordered home and to wait orders.

Asst.-Surgeon T. McC. Lippitt, retired from active service in the Medical Corps of the Navy, by reason of physical disability—gunshot wound—received in action at Pekin, China.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Sept. 25, 1902:

Assistant Surgeon-General G. T. Vaughan, granted leave of absence for one month from October 1.

Surgeon A. H. Glennan, granted five days' extension of leave of absence from September 22.

Surgeon S. D. Brooks, granted leave of absence for fifteen days from September 27.

P. A. Surgeon J. B. Stoner, to proceed to Washington, D. C., and report to chairman of board of examiners for examination to determine his fitness for promotion to the grade of surgeon.

Asst.-Surgeon L. D. Fricks, relieved from temporary duty at Savannah Quarantine, and directed to proceed to Savannah, Ga., and assume command of station.

Asst.-Surgeon J. W. Kerr, granted leave of absence for two months and fifteen days upon being relieved from duty at Hongkong, China.

A. A. Surgeon G. H. Altree, granted leave of absence for twenty-six days from September 15.

A. A. Surgeon C. W. Bailey, Department letter of Sept. 4, 1902, granting leave of absence, amended so that leave shall be for a period of two days from August 27.

RESIGNATION.

Surgeon T. B. Perry resigned, to take effect Sept. 15, 1902.

BOARDS CONVENED.

Board convened at the Bureau, Washington, D. C., at 10 o'clock a. m., September 20, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General H. D. Geddings, recorder.

Board convened at the Bureau, Washington, D. C., at 12 o'clock, September 20, for the physical examination of Captain O. S. Willey, R. C. S. Detail for the Board: Assistant Surgeon-General G. T. Vaughan, chairman; Asst.-Surgeon B. S. Warren, recorder.

Board convened at the Bureau, Washington, D. C., at 10 o'clock a. m., September 29, for the examination of P. A. Surgeon J. B. Stoner, to determine his fitness for promotion to the grade of surgeon. Detail for the Board: Assistant Surgeon-General L. L. Williams, chairman; Assistant Surgeon-General W. J. Pettus; Assistant Surgeon-General H. D. Geddings, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 27, 1902:

SMALLPOX—UNITED STATES.

California: Los Angeles, Sept. 6-13, 7 cases; San Francisco, Sept. 7-14, 5 cases.

Illinois: Chicago, Sept. 13-20, 1 case.

Indiana: Indianapolis, Sept. 6-13, 1 case.

Kansas: Wichita, Sept. 6-13, 1 case.

Kentucky: Covington, Sept. 6-13, 2 cases.

Louisiana: Shreveport, Sept. 13-20, 1 case.

Maryland: Baltimore, Sept. 13-20, 1 case.

Massachusetts: Boston, Sept. 13-20, 18 cases, 1 death.

Michigan: Detroit, Sept. 13-20, 8 cases.

Missouri: St. Louis, Sept. 14-21, 1 case.

New Hampshire: Nashua, Sept. 13-20, 5 cases.

New Jersey: Sept. 13-20, Camden, 2 cases; Newark, 2 cases; Plainfield, 1 death.

New York: New York, Sept. 13-20, 3 cases, 1 death.

Ohio: Cincinnati, Sept. 12-19, 1 case; Cleveland, Sept. 13-20, 86 cases, 7 deaths; Toledo, Sept. 6-13, 8 cases; Youngstown, Sept. 6-13, 1 case, 1 death.

Pennsylvania: Altoona, Sept. 13-20, 3 cases; Johnstown, Sept. 13-20, 17 cases, 3 deaths; McKeesport, Sept. 13-20, 3 cases; Pittsburg, Sept. 13-20, 20 cases, 6 deaths; Philadelphia, Sept. 13-20, 4 cases; Reading, Sept. 15-22, 1 case.

South Carolina: Charleston, Sept. 13-20, 1 case.

Tennessee: Nashville, Sept. 13-20, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 23-30, 3 cases.

Belgium: Aug. 30-Sept. 6, Antwerp, 1 case; Brussels, 1 death; Ghent, 1 death.

Ecuador: Guayaquil, Aug. 23-30, 3 deaths.

France: Paris, Aug. 16-23, 1 case.

Great Britain: Dundee, Aug. 30-Sept. 6, 1 case; Liverpool, Sept. 6-13, 3 cases; London, Aug. 30-Sept. 6, 12 cases, 2 deaths.

India: Bombay, Aug. 19-26, 3 deaths; Calcutta, Aug. 8-23, 2 deaths; Madras, Aug. 9-15, 2 deaths.

Italy: Palermo, Aug. 23-30, 2 cases.

Russia: Moscow, Aug. 16-30, 3 cases, 2 deaths; Odessa, Aug. 30-Sept. 6, 1 case; St. Petersburg, Aug. 16-30, 39 cases, 6 deaths; Warsaw, Aug. 8-23, 5 deaths.

YELLOW FEVER.

Colombia: Panama, Sept. 8-15, 3 cases, 1 death.

Mexico: Coatzacoalcos, Sept. 6-13, 3 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, May 10-Aug. 2, 622 cases, 410 deaths; Provinces, July 19-Aug. 2, 2,141 cases, 1,664 deaths.

CHOLERA—FOREIGN.

China: Amoy, July 26-Aug. 2, 40 cases, estimated; Hongkong, Aug. 2-9, 12 cases, 11 deaths; New Chwang, Aug. 2-16, 160 cases, 142 deaths.

Egypt: Alexandria, Aug. 16-30, 13 cases, 7 deaths.

India: Bombay, Aug. 19-26, 2 deaths; Calcutta, Aug. 8-23, 16 deaths; Karachi, Aug. 10-24, 1 case, 1 death; Madras, Aug. 9-15, 1 death.

Straits Settlements: Singapore, July 26-Aug. 2, 5 deaths.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 2-9, 14 cases, 13 deaths.

Egypt: Alexandria, Aug. 16-30, 7 cases, 4 deaths.

India: Bombay, Aug. 19-26, 35 deaths; Calcutta, Aug. 8-23, 19 deaths; Karachi, Aug. 10-24, 20 cases, 17 deaths; Madras, Aug. 9-15, 2 deaths.

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Original Articles.

LOW LATERAL PHARYNGOTOMY.

FOR APPROACH TO THE LOWER PORTION OF THE PHARYNX, UPPER PORTION OF THE ESOPHAGUS AND POSTERIOR SURFACE OF THE LARYNX, WITH AN ILLUSTRATIVE CASE.[*]

JOSEPH D. BRYANT, M.D.

NEW YORK CITY.

The operation of low lateral pharyngotomy for the purpose of reaching the lower part of the pharynx, the upper part of the esophagus and the posterior aspect of the larynx, is not a novel procedure except in so far as may relate to the larynx itself.

AN ILLUSTRATIVE CASE.

In the instance of the case in question, the patient, about 45 years of age, had suffered for many months with a tumor located apparently at the lower part of the pharynx, so low, in fact, that it could be seen only with the aid of a laryngoscope and could be felt at its upper aspect with the index finger introduced through the mouth only with much difficulty. The distance from the upper incisor teeth to the tumor was five and a half inches. The growth appeared to fill the entire pharynx at that situation, although the finger could be swept around the upper part very easily. However, at a distance of six inches from the incisor teeth the end of the finger, when thus swept, came in contact at the right border of the pharynx with an apparent attachment of the tumor to that aspect of the pharyngeal wall. The morbid growth was smooth and soft to the touch, evidently fixed in position, and had been regarded of a fibro-cystic structure. No external appearances suggested the existence of the growth or of its nature, and only a point of tenderness at the right side just behind the thyroid cartilage could be elicited on deep pressure. The patient could breathe readily except when in the recumbent position and during sound slumber, then the presence of obstruction, characterized by obstructive stertor and difficult breathing, were prominent. The patient could swallow all kinds of food, without any other evidence of interference than that manifested by turning the head aside a bit and involuntarily extending it, movements not entirely foreign to those noticed with deglutition in fowls.

Inasmuch as local treatment had in no manner been followed by benefit and the increasing size of the growth suggested the probability of early and dire complications of the functions of respiration and deglutition, harsher measures of practice were suggested to the patient. With this object in view I was requested by Prof. F. H. Bosworth to join with him in determining upon a final means of relief. Accordingly, it was determined that only direct removal would suffice, and low lateral pharyngotomy, at the right, for obvious reasons, was selected as the best means of approach to the growth. It was deemed wise to direct the lower portion of the incision so as to correspond to the site of the supposed attachment of the morbid growth to the lateral wall of the pharynx, thus enabling one to clearly define the important characteristics of the tumor and the best means of removing it, i. e., by enucleation, the hot loop, or by ligature or division of the pedicle.

With the head and shoulders well elevated to facilitate respiration, the patient was anesthetized with chloroform by Dr. Bennett. The approach of profound anesthesia was promptly attended with such a degree of respiratory obstruction as to require the employment of a trachea tube, which, in this instance, was introduced into the larynx in order to limit as much as possible the capacity of the space above the tube, thus minimizing the amount of blood that might enter the larynx in spite of packing should much bleeding attend the removal of the growth. As might be expected, the introduction of the trachea tube rendered quiescent the operation field and permitted placing the patient in all respects to suit the requirements of the occasion. I was assisted in the operation by my colleague, Dr. George D. Stewart.

DETAILS OF THE OPERATION.

After the introduction of the trachea tube the head was turned strongly to the opposite side and an incision made from a point about an inch below the body of the jaw, in a line corresponding to the posterior border of the thyroid cartilage, through the integument superficial fasciæ and platysma, to a point a little below the cricoid cartilage. The borders of the incision were drawn apart and held by means of traction loops, and the left greater cornu of the hyoid bone was firmly pressed to the right, thus bringing into prominence the right greater cornu, which was then seized with a tenaculum and drawn firmly upward and held, thereby increasing the open space below it and immobilizing the cornu, thus placing on the stretch and making prominent the part of the inferior constrictor at the floor of the incision, the thyro-hyoid muscle at the outer border and also the portion of the thyro-hyoid membrane immediately below the greater cornu, as well as the contiguous borders of adjacent muscles. It seems proper to note at this time that the external and internal branches of the superior laryngeal nerve are the only nerve structures of special significance that are reasonably exposed the snare. There are twenty-five cases or more on record of tumors of this sort and size which have been removed by pharyngotomy or by the mouth. The nature of the growth in my case was like that of an accessory thyroid. I had great difficulty in adjusting the snare, because the tumor had a very broad base, but finally removed it by means of an unusually large strong snare. Most of these tumors can be removed in this way, thus avoiding the difficulties and dangers of an external operation, as well as avoiding a tracheotomy and leaving a bad scar in the neck. I do not know whether it would have been possible to have operated on Dr. Bryant's case with a snare, but it should be done whenever possible. I was interested very much in the case, and the explanation of the method of operation. I wish to make a plea for the avoidance of pharyngotomy when possible.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

Dr. Frank J. Lutz, St. Louis—Besides the anatomic difficulties encountered in doing a subhyoid pharyngotomy the question of anesthesia is one of great importance. Some years ago I called attention to this and stated that the operation could readily be done under local anesthesia. The vital indications in my case were dyspnea and dysphagia. The patient was an old man who was dying for want of nutrition. The tumor was so large that I was afraid to use general anesthesia. Under local infiltration I was enabled to do the dissection without any mishap. I applied a 4 per cent. solution of cocain on the mucous membrane covering the growth and on the pharyngeal surface and under its influence the tumor was very readily enucleated. By the use of local anesthesia you secure the intelligent co-operation of your patient, which is very important. The literature of subhyoidean pharyngotomy is much greater than the author has stated.

Dr. George Goodhue, Dayton, Ohio—Some six weeks ago I was called to see a man who had performed pharyngotomy upon himself by the anterior route. He hugged the inferior maxillary so closely that he had left below the cut not only the trachea and larynx but the epiglottis. There was tremendous gaping. He had not cut any vessels, except those which had ceased to bleed, but they commenced again on manipulation and had to be ligated. The parts were sewed with catgut, layer by layer, using an interrupted suture. This case demonstrates a large field for operative procedure and leads us to wonder if after all the anterior route would not be preferable to the lateral.

Dr. R. F. Weir, New York—As to the practical treatment afterward in closing up esophageal wounds, I think Dr. Dawbarn is correct in his theory about this. It is a part of the body which can not be kept still. Mucus and saliva will accumulate and must be swallowed. You may close the leakage, but it will probably leak. Hence, in addition to the closure of the pharyngeal or esophageal wound, one should pack thence outward to the skin with something like iodoform gauze in order to prevent leakage. It is sometimes of advantage to use for this a sticky gauze and for this Whitehead's solution is of service. This consists of iodoform dissolved in ether mixed up with the compound tincture of benzoin, which gives to gauze dipped into it the desired adhesiveness.

Dr. Bryant, in closing—At the outset permit me to thank you for the courteous attention exhibited in connection with the consideration of this unusual case. As to the selection of the route of entrance to the pharynx, I had thought that I stated this part of the question as clearly as possible. Whether to seek the removal through an incision made in front or at the side was not clear to me at first, but later, when finding that the growth encroached more on the right than on the left side of the pharynx, it was appreciated that I might be able to define its limits, determine its attachments, and, perhaps remove it through a lateral opening better than from any other aspect of the neck; also, it occurred to me that I might be able to remove it from beneath its mucous membrane covering without impairing the structural integrity of the latter, which could not of course be accomplished by any other line of access. Only a sufficiently large incision was made into the larynx at the upper part of the common incision to enable me to investigate with the index finger the extent of the growth and its probable attachments, which facts were practically ascertained by this means. Extension downwards of this incision exposed to approach the tumor, which was enucleated with the finger, leaving its mucous covering intact. The opening into the pharynx was then closed with two rows of sutures in the manner already stated. The sac was rinsed out with peroxid of hydrogen, found by this means to be intact, was then dressed, and the upper portion of the wound finally closed as already described. From this time the real point of interest seems to me to be whether or not the sac would slough, in part or wholly, or contract into place, leaving only a protuberance which would slowly disappear. It did not occur to me, except in a passing manner, that injury to the carotid vessels might happen, especially since the incision was far removed from them. Only superficial vessels and nerves were involved in the first incision; the profounder ones already enumerated were avoided in the succeeding deeper ones. So far as the sewing is concerned I remember long ago performing an esophagotomy for removal of a campaign button and contrary to the advice of an older surgeon than myself, sewed up with a single row of catgut the opening through the mucous membrane and its immediate superimposed tissue the entire length, leaving unclosed though lightly packed with gauze, the larger part of the superficial wound. In this instance only partial union of the deep tissue ensued, the remainder healing slowly by granulation. However, something was gained by this step in sewing without attending danger, and therefore deep sewing should be considered a proper measure of practice. The drawing upward of the greater cornu of the hyoid bone with a tenaculum or traction loop, serves not only to increase the space beneath it for operative purposes, but also averts the movements of the parts—thereby affording increased opportunity and much comfort in making incisions here for various purposes, and especially in ligating the lingual artery.

I respectfully submit that it does not lie in the power of any man to so apply a hot or cold snare to a growth of this peculiar attachment as to enable him to remove it as promptly and effectively without subsequent annoyance as was done in this case.

THE SYMPTOMATOLOGY OF CALCULOUS RENAL AND URETERAL DISEASE.*

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The symptoms in calculous nephritis and ureteritis are seldom commensurate with the gravity of the case, or the size of the calculus. Small calculi are the most dangerous as they threaten the functional life of the kidney, before giving rise to symptoms that suggest their presence. A calculus resting in the calyx or pelvis of the kidney is simply a foreign body. So long as it remains aseptic it can only produce mechanical irritation or obstruction. Such a quiescent aseptic calculus can increase to large proportions before it is suspected.

A number of large calculi that have been found produced only a dull ache in the lumbar region, a slight amount of albumin, and in some a microscopic trace of pus. In some of these cases the condition had lasted for years and had been frequently diagnosed as chronic Bright's disease. The semi-quiescent calculi produce more marked symptoms. They are often adherent to the pelvic mucosa and cause hemorrhages after violent movements. If the blood is sufficient to form clots, they may produce obstructive symptoms and colic. In freely movable calculi the symptoms and size bear a closer relationship. The larger the calculus the less severe the symptoms. Obstruction is less liable and they are difficult to detect. Very small calculi, if smooth, may pass almost unnoted. If rough they may produce considerable pain as well as slight hemorrhage.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

When the calculi are somewhat larger and enter the ureter they are the most dangerous. They become impacted in the ureter, obstructing or occluding it, and produce a temporary or complete hydronephrosis that may result in unilateral anuria and the functional death of one kidney. When they progress down the ureter, their progression is marked by an intermittent hydronephrosis with a constant dull pain in the lumbar region, accentuated by acute exacerbations or colic attacks, as the calculus is pushed down the ureter. These calculi produce a symptom complex that closely simulates a movable kidney, a twisted ureter or a valvular formation. These various conditions have been frequently found in cases suspected of calculus where a negative diagnosis had been rendered excluding calculi. The time required for these ureteral calculi to pass has varied from a few hours or days, to months.

Such calculi may, however, become impacted in the ureter and give rise to the very grave condition of unilateral anuria. It is impossible to determine the presence of the calculus or of such a condition from the symptoms or urinalysis. After the occlusion, the urine is derived only from the normal kidney. The subsidence of the symptoms is identical, whether the ureter remains occluded and the kidney ceases to act, or the calculus passes unnoted or the urine finds its way past the calculus. The results are entirely different in their gravity. If the calculus is permitted to remain, the kidney will atrophy and any serious involvement of the other kidney will thereafter result in death.

The greatest danger, therefore, lies in permitting such a calculus to remain *undetected* and not removed by surgical intervention, if it is producing complete obstruction. The only way to determine the presence of the calculus is by operation, or by the Roentgen examination. The only way to determine the absence of unilateral anuria is to show that there is present a bilateral urinary flow, either by the cystoscope, the ureteral catheter or the segregator. The simplest and the gravest conditions may be present where there are aseptic calculi that fail to produce sufficient symptoms to determine their presence. The importance of a method that absolutely determines their presence or absence, as soon as suspected, is therefore evident.

When infection is present with the calculus, the symptoms approximate more nearly those classically described as renal colic. Yet any one, or more than one, of these symptoms may be wanting and yet a calculus be present. Thus the symptom complex may approximate or be identical with that of other intranephritic or extranephritic conditions. In fact, this similarity in symptomatology may make a differential diagnosis impossible except by the Roentgen method. The impacted calculus in the right ureter, producing a pyonephrosis, may closely resemble an appendicitis. The distended ureter, if the calculus is impacted just above the iliac vessels, may be mistaken for the swollen appendix. The exquisitely tender ureter over the calculus is close to the position of the inflamed appendix. The increased proportion of ureteral calculi, over sixty per cent., makes it highly probable that this error in diagnosis has been made. With complete impaction there would be no morphologic elements in the urine to aid, while all the systemic symptoms could be produced by the pyonephrosis, even the rigidity of the abdominal wall might be included, caused by a peri-ureteritis and peritonitis.

Recent investigations by Thomas R. Brown show that calculi in infected alkaline urines are probably secondary to the infection and result from the action of bacteria that decompose the urea, forming the phosphates and carbonates of calcium and magnesium of which the calculi are composed. This is undoubtedly true in some cases, but all calculi have their origin in the pelvis or calyces of the kidney, and many large calculi are found in perfectly sterile urines. Infection must in many cases be secondary to calculus formation, though it probably occurs more often in acid than in alkaline urines.

Where a calculous pyelitis is secondary to a cystitis the diagnosis would be very difficult. The cystitis might subside and a chronic pyelitis remain, without sufficient symptoms to make its calculous nature suspected. The persistence of a chronic pyelitis or cystitis should excite the suspicion of calculus and its presence should be eliminated or determined by the Roentgen examination. Two cases that approximate each other very closely in symptomatology will serve to illustrate how difficult the diagnosis sometimes is without the use of the Roentgen rays.

Case 1.—The first case (No. 32), A. B. D., 33 years old, was referred by Dr. Holman of Pittsburg. He had suffered from nervous prostration for five years. For the last eighteen months he had had acute pain in the left lumbar region. There had been pus in varying quantity in the urine. Sometimes the urine was perfectly normal. There had been no true colic. The urine contained pus, some red blood corpuscles, a slight amount of albumin, no casts and a few oxylate of lime crystals. Inoculations for tubercle gave negative results. There had never been any symptoms of cystitis. The Roentgen examination excluded calculus and the patient was referred for further examination and diagnosis. A sacculated atonic bladder was found containing sixteen ounces of residual urine loaded with pus. The atonic bladder and the lancinating lumbar pains suggested a spinal lesion with prodromal pains. The patient was put on urotropin to clear up the pus and referred to a neurologist. He subsequently developed a paraplegia from which he has partially recovered. This case simulated closely a calculous nephritis but proved to be neuropathic.

Case 2.—The second case (No. 231), A. G. C., 38 years old, was referred by Dr. R. W. Stewart of Pittsburg. Before coming under his care he had been treated by various physicians, including a neurologist of very high standing, for nervous prostration. His symptoms were lumbar pain, never intense in character, with no colic. A small amount of albumin, a trace of pus and large quantities of uric acid in the urine. The Roentgen examination showed a large calculus that formed a cast of the pelvis and calyces of the kidney. It had to be broken in order to remove it during the operation by Dr. Stewart. The patient has since made a complete recovery.

Of these two cases the first presents the more typical symptom complex of a large renal calculus, while the second had been treated as a spinal lesion of specific character.

Small movable calculi in the infected kidney have symptoms that resemble more closely the typical classical grouping of nephritic colic. The following case illustrates the symptomatology in cases where a small calculus is passing down through the ureter in an acute attack.

Case 3.—G. V. (No. 226), 38 years old, was referred by Dr. A. H. Goodwin. He had two attacks before the one in which he was examined. They had occurred three and eighteen months previously. The present attack had lasted six days before he was seen and examined by the Roentgen rays at his home. There had been malaise, sleeplessness, dry lips and skin, pulse 100-105 and anorexia. There was constant pain in the lumbar region and radiating from it, with exacerbations. There was no tympany, no muscular rigidity, no frequent urination. One ounce and a half of urine passed three and one-half hours after the onset of the attack showed acid reaction, yellow color, cloudy, albumin in small amount, a trace of pus, blood in pale discs, 2 hyalin casts in 5 slides, cylindroids plentiful. The urinalyses remained practically the same with a decrease in the blood and pus. The amount passed in the day was 777 c.c. with 16.9 grains of urea. For the first five days morphia had to be given for the pain. The Roentgen examination showed a small calculus in the juxta-vesical portion of the ureter. The calculus was passed five days after its detection. It was a small flattened oval, slightly roughened, of ash-brown color. It weighed 0.096 gm. A chemical analysis showed that it was composed of earthy phosphates and uric acid.

This case illustrates the value of this method of diagnosis and shows that small calculi composed of uric acid and phosphates can be detected with such accuracy as to justify the employment of an expectant line of treatment.

The character of the pain in renal and ureteral involvement in calculous conditions or in any obstructive lesion of the ureter is quite characteristic though not always to be depended on. The dull ache in the lumbar region is produced by a quiescent or semi-quiescent stone. The intense pain or colic, localized in the lumbar or renal region, and radiating from that point down into the testicle, is produced by a large movable calculus that blocks the ureter or a smaller calculus that has just entered it. The calculus that has entered and is passing down the ureter causes by obstructing the flow of urine the distension of the pelvis of the kidney and the ureter. The spasmodic contractions, that result in the pushing onward of the calculus, give rise to exacerbations of pain that are characterized by a tendency to nausea and vomiting when the upper portion of the ureter is involved.

The absorption of toxins from the pent-up pyonephrosis is generally expressed in gastric irritation. In one case (No. 121) of complete occlusion of the ureter, the absence of urinary disturbance and the presence of gastric irritation, led to the demonstration of the patient in a clinic as a case of nervous dyspepsia. Nausea and vomiting are not as constant symptoms when the calculus has passed the iliac vessels and lies in the pelvic ortion of the ureter. In its upper portion it is often ossible to palpate the distended ureter and elicit exquisite tenderness, "like a toothache," by pressure on the calculus. The pyonephrotic kidney can sometimes be palpated, its intermittent hydronephrotic or pyonephrotic state making the diagnosis of a movable or floating kidney very possible.

The ureteral calculus situated in the pelvic portion of the ureter may present a symptomatology identical with that of calculi higher up. It may present the symptoms of renal calculus only. The pain may be referred to the kidney alone, with no symptom to locate the calculus in the ureter. Or, the symptoms of cystitis or vesical calculus may be presented, with pain referred to the glans penis. The latter symptom is particularly common when the calculus lies in the juxta-vesical portion of the ureter, or when it projects into the bladder. It is not, however, a constant symptom and may be entirely wanting. Here it may also be possible to palpate the calculus by rectal or vaginal examination.

As recently pointed out by Dr. H. H. Young, the examination with the cystoscope and ureteral catheter is particularly serviceable. The ureteral papilla often shows decided changes on the affected side, or a calculus may be seen distending or projecting from the ureteral orifice. The collection of the individual urines and comparative analyses is of great service, as the functional efficiency of each kidney may be determined. The value of careful urinalyses, especially of the individual urines, should not be underestimated. Implicit confidence should not, however, be placed in the findings. The urinalyses from a number of conditions may often present identical characteristics. Bacteriologic analyses often prove of great value, but more often fail in detecting the micro-organism that is responsible for the pathologic condition. The most constant element present in the urinalyses from cases of calculous nephritis or ureteritis has been albumin. This element is so common in all renal inflammations that its presence is hardly more than suggestive. The amount of urea excreted, especially if the comparison is made between the individual urines, is very valuable in establishing the functional efficiency of the individual kidneys. The relative amount of sugar eliminated from the individual kidneys after the hypodermic injection of phlorizin is another new and valuable laboratory test.

The separate urines give an additional value to microscopic examinations, but the traumatism produced in obtaining them makes it impossible to depend on them in estimating the amount of blood. It can only be accurately estimated in the fresh specimen secured without instrumentation. It is found so often in other conditions that its value as a sign of the presence of a calculus has been overestimated.

Pus is an element that can only have diagnostic value when its source is accurately determined by the catheterization of the ureters. It is, however, still a mooted question whether catheterization is justifiable in the presence of infection, especially in the male.

The difficulties in the way of making a differential diagnosis from the symptoms and urinalyses are, therefore, very great, especially when we take into consideration the fact that one or more of these symptoms may be wanting. They are equally great in intranephritic and extranephritic conditions that simulate each other very closely in symptomatology. It is, however, particularly difficult to determine the presence of the smaller calculi, which, as has been shown, are the source of the gravest danger. But all calculi should be detected and removed in their earliest stages, as soon as a suspicion points to their presence. The symptomatology of these earliest stages is too uncertain to base operative procedures upon. Delay is dangerous, while the presence and size of the calculus is still undetermined. Delay is the best treatment, when the exact determination of the size and position of the calculi shows that its passage can be safely awaited by nature's methods. Such exact knowledge removes an element of imminent danger from the patient, and often results in the complete avoidance of all operation.

These deductions are based on the study of 254 cases suspected of calculous conditions that have been referred for the Roentgen diagnosis. In the 73 positive diagnoses calculi were found in the ureter 47 times; 50 cases were in males, 18 in the kidney, 32 in the ureter; 23 cases were in females, 8 in the kidney, 15 in the ureter. In 11 cases bilateral calculi have been found, sometimes both renal and ureteral. Multiple ureteral calculi have been found in 6 cases.

The value and accuracy of the Roentgen method and its superiority to all other methods in determining the presence or absence of calculi in the urinary tract has been demonstrated beyond a doubt. The variations in symptoms and the frequency with which they are deficient in the early stages render it essential to the safety of patients suspected of renal or ureteral lithiasis that they should be submitted to a Roentgen examination and the presence or absence of all calculi determined.

Such an accurate and absolute diagnosis can not be made until the diagnostician has developed a careful technic. Clinical experience is essential in reading the negatives as well as in making them, and must count in estimating the value of the diagnosis rendered.

112 South Twentieth Street.

INFRAPUBIC SECTION FOR PROSTATECTOMY.*

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CHICAGO.

The operation here described is based on principles somewhat at variance with those now current, and I beg your indulgence if I speak dogmatically while trying to make its features plain. I have to offer as an excuse the good results I have attained and the rather chaotic condition of the whole subject in the literature.

STRUCTURES CONTRIBUTORY TO THE OBSTRUCTION.

We are not accustomed to consider the male pelvic outlet as of surgical importance, but we must now revise our ideas of pathogenesis and treatment of prostatic obstruction if my theories are true, and concede that the bones and ligaments also of the pelvis have much to do with compressing the urethra in prostatics. I contend that unless there is crowding together of the walls of the prostate by outside pressure, enlargement alone will not cause stoppage. That this crowding does take place I will endeavor to show. Were the prostate free to expand, I believe that enlargement of the organ would seldom cause dysuria, as the vesical sphincter is not a part of it. At any rate, many very large prostates have come under my notice, in which there was no retention and no cystitis. A much smaller one, bound tightly against the pubis and subject to lateral pressure, will often give complete obstruction. Of course, the presence or absence of inflammation often determines the question of *obstruction in* different cases or at different times in the same case. It is not fair, however, to give this too great weight, because there are undoubtedly large numbers of cases constantly obstructed by mechanical causes, only the inflammatory part of the trouble being unimportant. The thesis I wish to defend is this: The prostate, when enlarged by myomata or other cause, like a myomatous uterus, lacks room in the bony pelvis and crowds all the other organs and itself until it obstructs its own lumen.

The prostate sits in a rigid triangle, having one side of ligament and two of bone. It is exceedingly firmly fixed in this narrow box by the short, hard band called the triangular ligament and the two prostate-pubic ligaments. These effectually prevent any backward motion into the looser and wider space behind, except in so far as the ligamentous fibers can stretch. The triangular ligament (lig. transversum pelvis) also forms a perfectly rigid floor on which the organ is firmly seated and through which the urethra perforates, thus establishing, immovably, the position of neck of the bladder, prostate and bulb.

A consideration of these anatomic and pathologic points led me to devise the operation I now advocate. This is a partial prostatectomy, the posterior part of the gland being left in place. It is, however, more than this, as it involves cutting loose the gland from its pubic and lateral ligaments, and partial destruction of the pelvic floor or urogenital diaphragm, with dislocation backward of the whole mass. This means such a radical departure from the old technic that a few words of explanation seem necessary.

DISCUSSION OF THE COMMON ROUTES OF OPERATION.

Of the two routes commonly chosen, suprapubic and perineal, each present various phases that are instructive. After a fair experience with each, I became convinced that certain types of enlargement are better suited to suprapubic prostatectomy, and certain others to the perineal, although I admit that the pre-operative selection is not easy.

An advantage of suprapubic section is remoteness from complex structures about the vesical neck, such as the numerous nerves, vessels and muscles located there, deep fascia, pelvic floor, posterior urethra and seminal vesicles and ducts. Incising the fundus of the bladder in Retzius' space is a much less damaging cut. The suprapubic opening also gives more visible field, enables us to detect and remove stones easily, and gives easier route for pedunculated internal lobes. My observation is that emphasizing certain *features* of the technic makes suprapubic prostatectomy a rather rapid and easy operation. The features are:

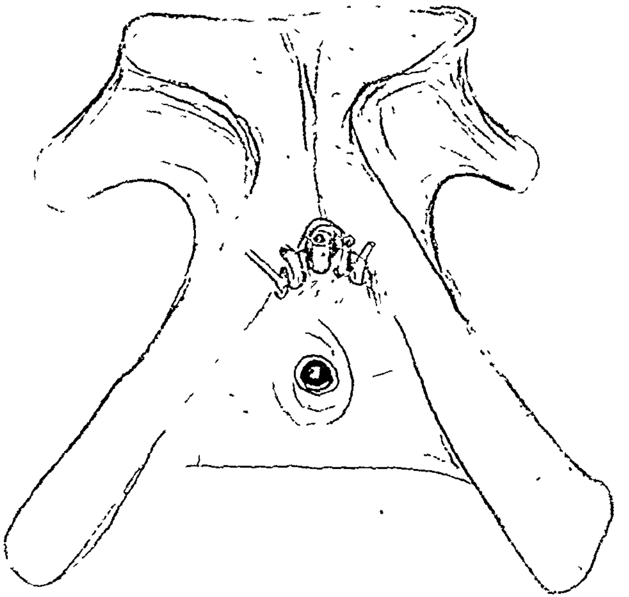

Fig. 1.—Infrapubic section, dorsal vein, arteries and nerves.

1. Use of a larger Barnes' bag than usual, lifting the prostate into a visible position and holding it against the pubic arch.
2. High Trendelenburg position, which seems to cause the prostate to move toward the front still more.
3. Careful incision of the capsule through the bladder wall, turning it off the gland in a flap each side.
4. Bimanual enucleation. The gloved hand or two fingers in the rectum constantly working against the one in the bladder so that the prostate and its myomatous masses are shelled out between them. If items 3 or 4 are neglected, the operation is long and bloody, especially if instruments are used *instead* of fingers to enucleate.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

Advantages of the perineal route are: More perfect drainage by gravity and tubes. An extravesical operation except for a moderate hole in the prostatic urethra. Preservation of the vesical sphincter function in some cases at once. Dr. Murphy has reported a case in which the bladder held urine at once. It is not uncommon for voluntary urination to begin within a week. Many cases, however, have a slow healing. I have found Dr. Ferguson's retractor a useful instrument.

Disadvantages of both these methods are found in the fact that the urinary tract is laid open with subsequent slow healing and urinary infection of surfaces. This is more dangerous as age advances, and in the presence of kidney lesion and infected bladders, prostatic cases are rarely anything but septic. A certain number of deaths occur suddenly from thrombosis of the prostatic plexus and embolism.

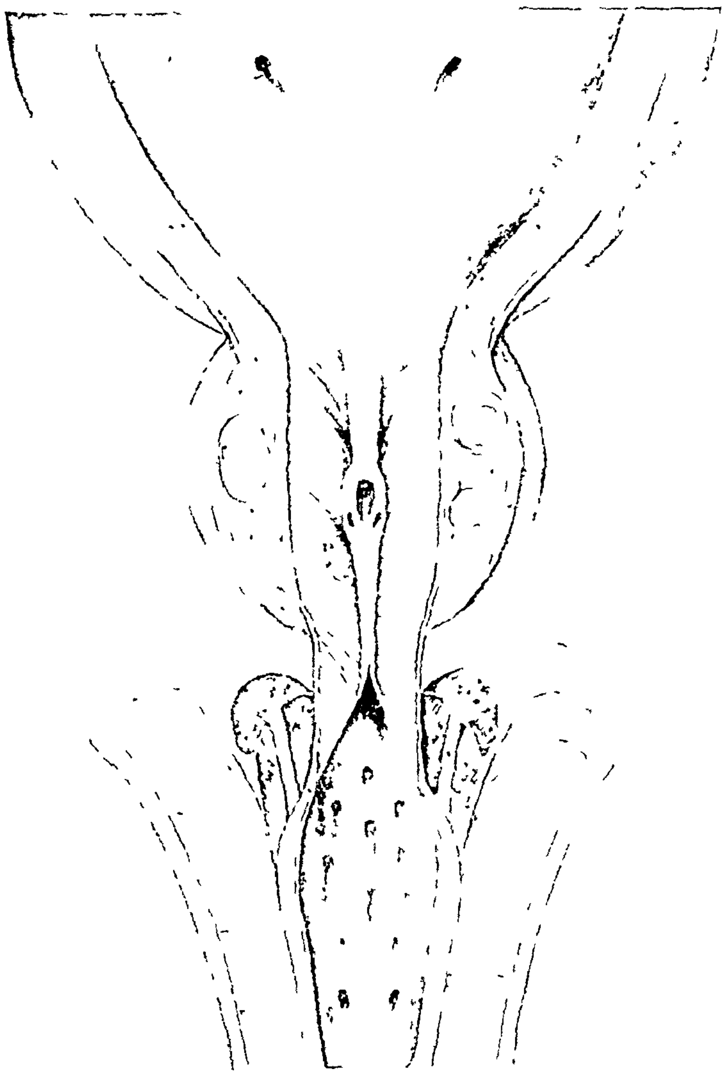

Fig 2.—Section showing myomata in prostate, utricle and ducts.

The ideal method would leave the urinary tract unopened, and would, therefore, involve no more risk to life than a clean operation, say herniotomy, the removal of a lipoma or any moderate external operation usually called safe in absence of organic disease. There is nothing in our experience to warrant the hope the time will ever come when we will open the bladder as we now do the peritoneum with virtually no risk. Nobody of much experience claims that a long series of cystotomies can be performed without a regular percentage of deaths. If he claims immunity from risk in opening the bladder, even in good subjects he cannot show any large series of cases to prove it. All the care and antisepsis known have not made lithotomy take the place of lithotrity in percentage of recovery. I have known a number of good operators who thought it was going to do so, judging by the triumphs of antiseptic surgery elsewhere and by a small series of successful cases with careful technic, but each one of these has met later his fair percentage of deaths, and the question stands exactly where it did before. Cutting operations still have the greater mortality, if we may judge from the very extensive reports of the East Indian surgeons, many hundred operations being reported by single individuals.

THE AUTHOR'S INVESTIGATIONS.

If a method of dividing or relieving the prostatic ring entirely from without could be perfected, probably instead of 5 or 10 per cent., the mortality would be less than 1 per cent., and our aged patients would be kept but a few days recumbent as against several weeks by present methods.

I do not think this will ever be done regularly by the perineal route. I have tried as consistently as I know how to accomplish this and have seemed to be very near it in one or two cases, but, after the most careful planning, I have each time opened the prostatic urethra. Everyone else I have seen operate has done the same thing, and I believe it occurs regularly by present methods. There is no way of getting the prostate out, or even divided from the rectal side, without opening the canal because of the rather firm attachments to the verumontanum, and the shape of the urethra, with its utricle and ducts.

The nearest I ever came to doing this was in a large prostate operated on by a long incision extended around the left of the anus to the coccyx, with the patient in the reversed Trendelenburg posture. After separating the rectum from the prostate well up, I could readily palpate and see the whole gland and part of each seminal vesicle. After enucleating both lateral lobes, I cut them away with a piano-wire écraseur, leaving an isthmus, as I supposed, containing the whole urethra. I found in a few moments, however, that there was an opening in the prostatic urethra, and on slight manipulation the middle lobe came out in the form of a round adenoma five-eighths of an inch in diameter. This was the most determined effort I have made to avoid opening the mucous canal, but I may say that I have had it in mind constantly that I would learn to do this somehow and have more or less consistently tried to do it every time I operated. My opinion now is that the thing is impossible when working from the rectal side.

I next considered three other routes which seemed possible, viz.: 1, suprapubic; 2, transpubic by symphysiotomy; 3, infrapubic, i. e., in front of the urethra. The suprapubic barely enables one to touch the prostate before opening the bladder. I experimented in doing ordinary suprapubic cystotomy, and easily found this out. Although the bladder separates very easily from the bone, I do not deem it a safe region to work in because of the dorsal vein and accompanying vessel just underneath the symphysis. These same vessels I encountered from below, but I could there see and avoid cutting them. The transpubic or symphysiotomy route I considered too much in the category of a capital operation.

REASONS FOR PREFERRING THE INFRAPUBIC ROUTE.

Now as to why I advocate the infrapubic cut: If the root of the penis and pubic arch be examined in a thin patient, it will be found that the penis can be drawn aside and flattened against the bone until nearly the whole space is available for an opening. I started with the idea of an incision near the symphysis, a drawing aside of the two cords and detachment of the penis by severing the pubic attachments. This I tried on a cadaver, thinking I could then draw the neck of the bladder well down and have the prostate quite accessible. I was disappointed to find less access than I had hoped for in the cadaver, and I feared to try it in the living subject on account of danger to the dorsal vein and arteries of the penis.

If, however, the right or left spermatic cord be drawn well forward, an incision about 8 or 10 c.m. long can be made from the symphysis parallel to the right or left ramus of the pubic bone. In this diamond-shaped opening, with the penis held aside by a retractor, are: 1, a space of fat about one-half inch wide; 2, the ligaments attaching the penis to the pubis, and the prostatopubic ligaments between which pass, 3, the crura of the corpora spongiosa each side; 4, a large vein, the dorsal vein of penis with two smaller arteries and two nerves The fibers of the levator ani muscle, embracing the prostate and the inner surface of the obturator internus, come forward in the lateral part of the field and the deep fascia fills the whole space with a strong covering which must be cut away in front before we get inside the pelvic floor. The internal pudic artery and particularly a large branch to the bulb, must be avoided in doing this.

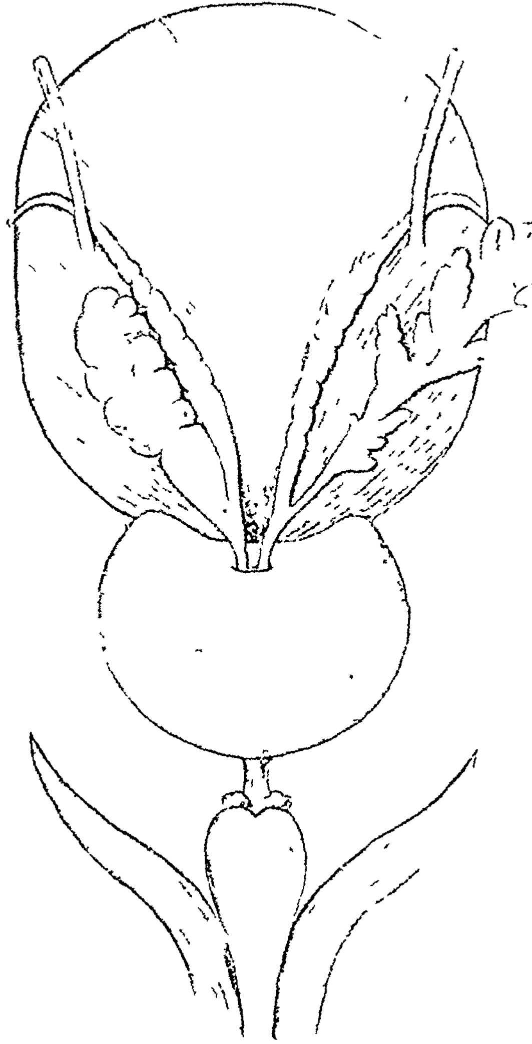
Fig 3—Bladder, prostate and seminal vesicles

After pushing aside the vessels here encountered and dividing the pubic ligament of the penis, the cutting off of the deep fascia and part of the levator ani allows the membranous urethra and prostate to be pulled into view by traction on the penis. The two prostatic ligaments are now in plain view and are made tense by our traction. They appear to be about 1.5 or 2 cm. long, and if they are both divided close to the prostate the latter will come still further into view. This partial destruction of the pelvic floor is permanent and is of great value in preventing further compression of the prostatic urethra by the grasp of the levator ani. It also makes the bladder prolapse a little so that there is no longer a retroprostatic pouch, but the orifice of the urethra becomes the lowest point.

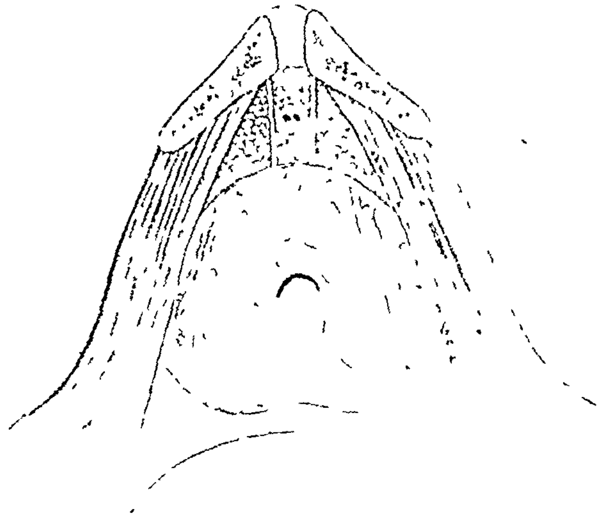
Fig 4—Prostate fixed in pubic arch.

The completion of the operation, however, involves attacking the prostate itself and either severing its ring or removing a segment of it in a purely external manner. Unlike the posterior wall, the anterior segment is thin and fairly easy to separate from the mucous tube of the urethra or at any rate a portion can be cut away without opening it. About one-fifth of the diameter of the gland is anterior to the canal. A large steel sound should now be inserted and a very careful dissection made to identify the urethral canal at its junction with the membranous portion. With a little care this can be done, and when once started the Kocher director can be pushed gently upward and the splitting process continued until the entire ring is divided. In the cadaver operation I was able to turn back rapidly a segment of prostate each side, and then cut off a small piece amounting to one-fourth or one-third of the whole circumference of the prostatic ring. In the living subject I have found a rapid spreading of the split prostate after the cut is made, and the urethra with its sound seems to rise partly out of the mass.

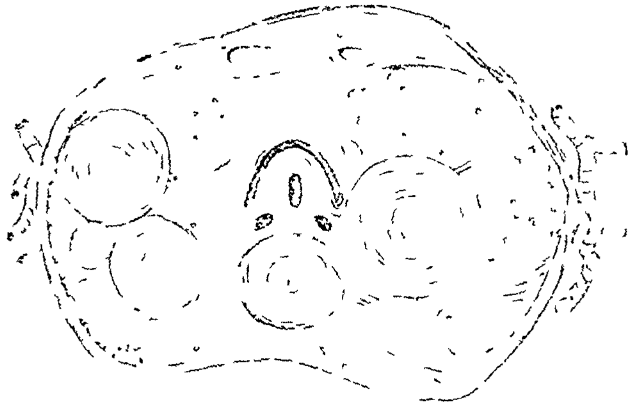
Fig 5—Section of myomatous prostate

I am satisfied that this division alone does much to cure the obstruction, but I cut off a piece each side of the division about 1 cm. wide, and could have enucleated much more in one case, but preferred to take no risk of opening the canal.

I believe now that good results from extensive division of the pelvic floor in front including the anterior attachments of the levator ani. I do all I can to weaken these forward attachments so that the subpubic contents will sag backward and downward into a region where no bony pressure can exist. This can be assisted by divulsing the tissues somewhat in a backward direction.

The levator and fibers embrace the prostate. The latter is normally held in the grip of the muscle and is both lifted and compressed by its contraction. When enlarged, this action becomes exaggerated, as the organ is increased in breadth so that the muscular fibers of the pelvic floor are less parallel as they pass around it. and hence the prostate is much more powerfully squeezed as they contract. The voluntary contraction of this muscle, which ordinarily lifts both the anus and prostate and assists in expulsion, now fails to lift the great tumor and only squeezes it tighter together, while at the same time the anus is forced against it. In many cases the result of this is not only to compress the urethra and increase tenesmus, but to cause functional derangement of the anus and rectum, so that patients suffer acutely from rectal tenesmus every time the bladder is strained upon, and also suffer vesical spasm whenever the rectum contracts. This combination of symptoms has probably been met by everyone, and is not confined to cases with cystitis. Patients so affected often think they have piles when in fact no tumors or proctitis are present.

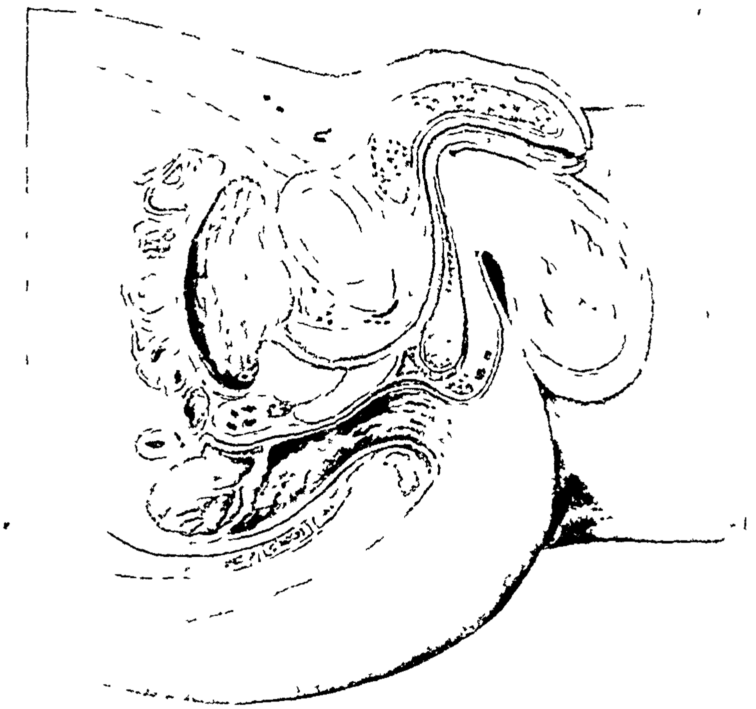

Fig 6—Section showing prostate and duct and dorsal vein.

Of course, another element in the rectal disturbance is the backward pressure of the prostatic tumor higher up on the rectal wall, causing much the same symptoms as a retroflexed uterus. The only wonder is that all prostatics do not have this class of symptoms. As a matter of fact a fair minority do have them.

I would if I could divide the levator ani muscle and pelvic fascia enough to allow the pelvic contents to fall very markedly in every prostatic case. I cannot divide them very completely except in front and on one side. The subpubic attachments are, however, pretty well loosened, and this will be found to have relaxed the whole space to some extent. This space is, in fact, *very much crowded* by the encroachment of the gland, but, as the pelvic outlet is narrow only in front, instead of dropping downward when the tissues are cut, the pelvic organs move backward, or backward and downward. This does not compress the rectum for the very simple reason that the coccyx goes back with the rest as it is released by loosening the levator ani in front. Every half-inch backward the prostate can go brings it into a wider space between the bones, and the general result is a great loosening up of all the structures concerned in pressure on the neck of the bladder.

A backward and downward displacement of the bladder outlet is a very valuable aid to urination, also by abolishing the retroprostatic pouch of the bladder. This pouch forms by the sagging of the posterior wall behind the elevated prostate, which, from its firm anchorage to the pubis, cannot descend. Relieving the prostate allows it to become again the lowest point, so that the bas fond is funnel shaped. Another evidence of the value of changing the position of the outlet is the permanent good results sometimes following drainage.

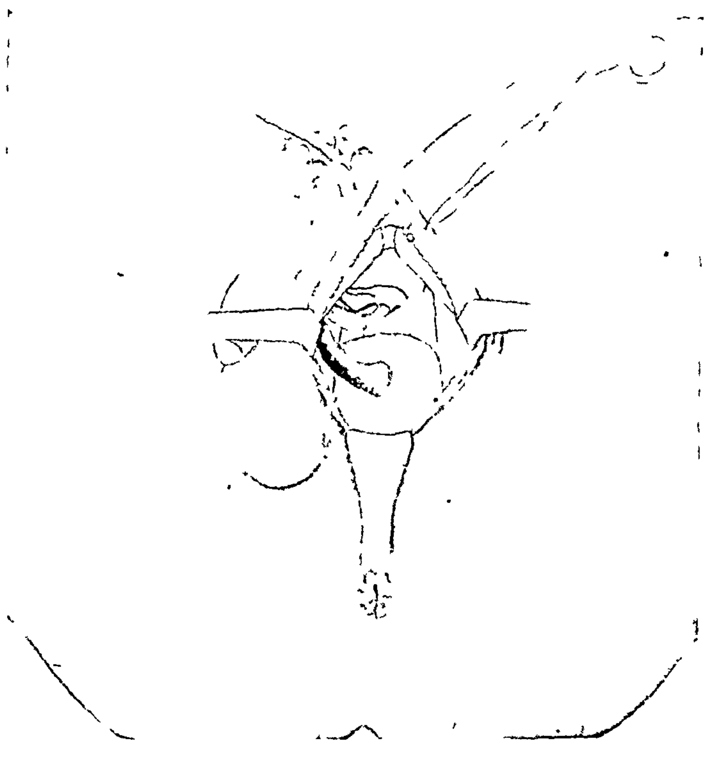

Fig 7—Author's incision exposing prostate, two pubo prostatic ligaments, dorsal vein and arteries

The real value of suprapubic cystotomy is in the effect it has of ventral fixation. This draws up the retroprostatic pouch and even the prostate itself. It fails often of good result because it does not relieve the tension of the pelvic floor. The existence of this pouch is easily demonstrated in some individuals by passing the urine, first in a sitting, then in a standing, and last in a knee-chest or hand-and-knee posture. Certain patients can by this change evacuate a number of ounces more at once with each change of posture.

CONCLUSIONS.

1. The narrowness of the male pelvic outlet becomes surgically important with the overgrown prostate.
2. Overgrowth of prostate does not cause obstruction unless there is also outside pressure.
3. This may come from the ligaments and muscles without the organ actually pressing upon the ischia or from bony pressure.

4. Relieving the prostate from the fixed space behind the pubis allows it to expand and cures the obstruction.

5. This can be done best by an anterior incision and should be accompanied by a cutting of the prostatic ring and removing a segment extra-urethrally.

6. Incidentally the change of position, lowering the bladder outlet, does away with the retroprostatic pouch, and greatly assists natural drainage.

7. The separation of the prostatic and urethral ligaments from the pubis and the weakening of the uro-genital diaphragm is not to be avoided, but sought.

(The discussion on the papers of Drs. Leonard, Andrews, Fuller and Munro will follow the papers of the latter two next week.)

THE DISAPPEARANCE OF OPACITIES OF THE CRYSTALLINE LENS.*

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SPONTANEOUS DISAPPEARANCE OF SENILE CATARACT.

In 1900 I reported[13] an interesting case of this nature in a man of 73, who had marked senile changes in his circulatory system as well as prominent muscular and nervous symptoms. Several months before his first visit to me he had an attack, which was at first diagnosed as apoplexy, but later was judged severe cerebral congestion with effusion. His vision had always been satisfactory until a few months before I saw him. He distinctly stated that twenty-five years before a grayish spot came over his pupil, and he became blind in his left eye. He consulted the late Dr. Holmes of Chicago, who diagnosed mature cataract. Operation was deferred on account of the perfect vision of the right eye. Ten years later the cataract had become totally absorbed. At my first examination I found an absolutely aphakic eye with no signs of lens or capsule. The anterior chamber was very deep, and the iris was tremulous and slow to react. The media were perfectly clear, but there were evidences of an old chorioretinitis, with some involvement of the optic nerve. With + 13 D, central vision was 30/40, but in the periphery both the form and color fields were almost obliterated. He had an inconsiderable defect in his right eye, the correction of which gave him 20/20 vision, but here again the fields for form and color were much contracted on the temporal side. In the periphery of the fundus of this eye there were evidences of choroidal disease, but the lens was perfectly clear. The aphakic left eye deviated outward, even when corrected with a convex lens. There was absolutely no history of injury or operation, and the cornea showed no cicatrix. He never remembered having had extreme pain or marked external evidence of inflammation in either eye. On account of the external squint, the limitation to central vision and the great disparity in the refraction of the two eyes, a plane glass only was ordered for the left eye.

Analogous observations have been recorded by Becker, Brettauer, Arlt, von Jaeger, von Hippel, Norris, Czermak, Natanson, Koenig, Warnatz, Steinhoff, Arens, Kipp, Chisholm, Stephenson and others.

Trousseau[22] has recently reported the spontaneous resorption of a cataract in a woman of 55, who had been operated on for a severe attack of glaucoma. Iridectomy was performed on both eyes at the same sitting. A few months later cataract developed in one eye, maturing within three months. Shortly after the cataract began to disappear, and in four months was completely gone. Reuss has recorded a similar case. He collected 33 cases of spontaneous resorption of cataract. In more than 50 per cent. there was some complication; in 7 per cent. glaucoma.

After a careful and thorough digest of the literature of this subject I have classified the reported cases as follows:

1. Cases in which there was absorption after spontaneous rupture of the anterior or posterior capsule.
2. Cases in which there was spontaneous dislocation of the cataractous lens.
3. Cases in which there was intracapsular resorption of the opaque cortex and sinking of the nucleus below the axis of vision, after degenerative changes in Morganian cataract, without rupture of the capsule or dislocation of the lens.
4. Cases in which there was complete spontaneous resorption of both nucleus and cortex, without reported history of ruptured capsule, dislocation or degenerative changes of the Morganian type.
5. Cases of spontaneous disappearance of incipient cataract without degenerative changes or marked difference in the refraction.

It is only the fifth group of cases that may be legitimately discussed in the present paper, and it seems a pardonable repetition to quote from my previous article[13] the description of two cases illustrative of the disappearance of the opacity in senile cataract, without absorption of the lens substance—both, curiously enough, commencing after a severe attack of conjunctivitis.

The first case was reported by Gardiner[5] in 1891. The patient was 64 years old. The right eye had become so defective that reading was no longer possible. In the left eye there was only light perception. At first glance both lenses presented the same appearance, but on closer examination it was seen that there were superficial clear-striated areas in the right cataract, while the left was entirely opaque. The left lens was extracted, and during the convalescence the patient was attacked with what was called "a severe conjunctivitis" in the unoperated right eye, which lasted one week. At the end of the fourth week vision with + 11 D. = 20/20 in the left eye, and with — 1.50 D. = 20/30 in the unoperated and formerly cataractous right eye. Several months later the refraction of the right eye increased to — S. 4.50 — C. 1.50 axis 180, and vision fell to 20/50. With the exception of a small grayish opacity posteriorly the whole lens was quite transparent.

Norris[12] has observed a somewhat similar case in which the subjective sensations caused by the development, ripening and subsequent absorption of cataracts within their capsules were well recorded by an unusually observant woman of 75, over a period of fourteen years. Following two severe attacks of conjunctivitis considerable visual change was noticed, and on rising one morning of the eighth year of observation, she found that she could see better than usual. Under full mydriasis, with a 1/10 concave lens, vision = 16/100. Three years later the myopia had decreased, and with a 1/30 concave lens, vision = 20/200. With a 1/5 convex lens, Jr. V. could be spelled out at four inches. This visual state remained the same until the patient passed out of observation, still wearing her glasses and keeping the pupils dilated with a weak solution of atropin. Norris describes minutely the gradual lenticular changes in both eyes.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

EXPERIMENTAL PRODUCTION OF CATARACT.

As early as 1857 Kunde experimentally produced cataract in frogs by introducing into the large intestine and subcutaneously solutions of common salt or sodium nitrate, and he stated that the same effects might be shown in kittens or dogs. Strong solutions of sugar act similarly. Kuehnhorn, Weir Mitchell,[9] Deutschmann and many others have showed that immersion of a fresh transparent lens in a solution of sugar or salt produces superficial opacity, which clears if the lens is put immediately into fresh water. It is of interest to note that a lens dislocated into the vitreous may retain its transparency for many years. DeWecker reports a case in which a dislocated lens remained clear in the vitreous for eight years, and C. Jaeger claims to have seen a lens remain transparent in the vitreous for a period of 30 years. Theobald[21] reports a case in which a lad of 18 had been able for ten years to voluntarily shake a dislocated transparent lens into the anterior chamber, and preferred to do this rather than use cataract glasses. The lens later became opaque and the capsule burst, giving rise to a marked inflammation. Williams mentions a case of spontaneous dislocation of the lens in both eyes without loss of transparency. There was frequent prolapse of the lens into the right anterior chamber.

Again, it has been proved that if the blood vessels of a frog are injected with a solution of sugar or salt of sufficient density, the crystalline lenses will become opaque, and that if the frog is placed immediately in fresh water this opacity will clear. Deutschmann[3] maintains that a lens will become cloudy only when the solution contains at least 5 per cent. of sugar or 2.5 per cent. of salt. Recent analyses of the aqueous in cases of diabetic opacities have shown that the percentage of sugar is below this minimum. Hence, it has been argued that it is likely that we must attribute the lenticular changes in diabetes to more complicated disturbances of nutrition than the simple extraction of water. In addition Weir Mitchell[9] called attention to the fact that an exposed lens when dried does not become opaque. In the early stages of cataracts produced experimentally, there is seen an edema detaching the lens capsule, and separating the lens fibers, with subsequent degenerative changes.

In the ninth volume of the *Johns Hopkins Hospital Reports*, R. L. Randolph reports some suggestive experiments relative to the regeneration of the lens in rabbits and newts, or water lizards.

DISAPPEARANCE OF OPACITIES OF THE LENS AND CAPSULE AFTER TRAUMATISM.

Deutschmann reports two instances in which after 36 hours rest and the application of a pressure bandage there was complete clearing of a diffuse and sharply defined opacity beneath the lens capsule, following a wound of sclera at the periphery of the anterior chamber. Dr. Frank Fisher of Philadelphia has told me of a similar case, in which he applied several scleral sutures. Although the opacity persisted much longer, the ultimate issue was perfect vision. Becker has observed the eventual clearing of transient opacity of the lens after iridectomy for glaucoma, with no demonstrable injury to the capsule. He attributed the opacity to pressure on the anterior lenticular surface after evacuation of the aqueous.

J. J. Mills[25] reports an interesting case of the clearing of traumatic cataract in a lad of 19, and describes similar cases reported by Knapp, Plaut, Rydel, Desmarres, Jr., and Völckers.

Norris[12] has collected a number of cases in which minute and sharp-cut wounds in the lens capsule may heal with a perceptible scar and the resultant cataract clear or remain only partial. Robert[17] reported a case in which the lens capsule was punctured by a spine of a chestnut burr. The spine was removed through the corneal wound, and although the lens became cloudy, it afterwards cleared entirely. That a scar caused by a capsular wound may afterwards clear is proved by cases of Mackenzie, Liebreich and others.

It may be of interest to recall that foreign bodies may lodge in the lens and not cause permanent opacity. Norris[10] has seen a case in which a foreign body remained in a clear lens for 28 years. Doyne[4] records an instance in which for nearly 30 years a soldier carried a fragment of a gun-cap in the nasal quadrant of the posterior portion of the lens, during which time the lens had remained so transparent that he could use the eye for aiming his gun. Desmarres, Jr., mentions a case in which a foreign body lodged in the lens causing opacity, which subsequently cleared up, leaving only a small black spot surrounded by a very limited cloudy area. Jackson and Schneideman[24] report a case in which, although a foreign body had passed through the lens three months previously and had left an opaque track through the media, vision was only reduced to 5/7. The foreign body could be seen embedded in the retina.

LONG-DELAYED OR NON-PROGRESSIVE CATARACT.

It is well known that the progress of senile cataract beyond the incipient stages may be delayed many years. Opacities in the naso-inferior quadrant sometimes increase so slowly that they may be almost called non-progressive. DeSchweinitz[10] describes a case in a woman of 68, in which there was practically no change for 22 years, although she used her eyes continually and regardlessly at the finest kind of close work. At the last examination vision in the right eye was 6/12, in the left 6/15.

Norris[12] cites instances in which the progress of cataract beyond the initial myopic changes (the so-called "second sight") were delayed as long as 25 years. Nicati has observed in a myope of 78 the disappearance of faint opacities in the anterior cortex, with full acuity of vision two years later with a — S. 9.00 lens.

CATARACT ASSOCIATED WITH CHOROIDAL DISTURBANCE.

It has been contended that, as cataract is often the direct result of hyperplastic and degenerative changes incident to malnutrition, if the nutritional disturbance could be regulated, the lenticular opacities might improve, or at least be held in check; and there is little doubt that the maintenance of general health, the treatment of any constitutional disorder, careful and repeated refraction of the eyes, may delay the maturation of cataract. In cases associated with ocular disease, particularly a generally disturbed and congested choroid, not a true exudative inflammation but what is aptly described by DeSchweinitz as "epithelial choroiditis," the prolonged use of cycloplegics, the administration of alteratives and other appropriate measures are of great value in preserving visual acuity. Risley[16] has been a prominent advocate of such treatment; and DeSchweinitz[19] mentions a case in a woman with choroidal disturbance, who, under strict medical supervision for 11 years, showed practically no increase in well-marked striæ and fine clouding of each lens. However, both of these observers, before this section in 1900, expressed themselves in no uncertain terms as to the permanency of already existing opacities. DeSchweinitz said that although under appropriate treatment lenticular changes apparently on the increase *may* be checked, he had never seen "the smallest speck of opacity disappear." Risley confirmed this statement and urged that it should distinctly go on record in the proceedings of this Section, that there is never "the slightest disappearance of an opacity in the lens." He added: "Where an opacity is formed in the lens you can rest assured it will remain there, and I think we should say so in order to prevent imposition on the community by the charlatans who advertise the removal of cataract by absorption." Von Jaeger remarks that he has often seen cataract stationary in cases, the result of traumatism or slight choroiditis, but he had never, under any circumstance, observed the clearing of even the slightest senile opacity. However, he reports the case of a young myope in whom marked equatorial striæ in both anterior and posterior cortex gradually cleared and entirely disappeared in five years. On the other hand, Wood[23] reports the case of a woman past 70, in whom there were evidences of extensive choroidal disease when the lenticular opacities were first noticed. There was a quiescent period of nearly five years, during which the fundus disease remained inactive and the cataract nearly non-progressive. Unremitting close work was continued. After an interval of eighteen months the cataract seemed mature. Six months later it had partially cleared and an area of recent choroiditis was discovered in the fundus. Later there was renewed advance of the lenticular opacity, although *no new choroidal disease* developed. The cataract was extracted with ultimate corrected vision of 20/30.

I have seen the partial disappearance of a dense nuclear opacity after appropriate treatment for choroidal disturbance and systemic gout, with corrected vision of 6/20 in a man of 50. At the present time, after discontinuance of dietary and hygienic precautions, the opacity has returned, and corrected vision is reduced to 5/200, with complete obscuration of fundus details.

Dr. H. V. Würdemann has given me histories of three cases of complicated choroidal cataract in which the opacity cleared to a marked degree, in one instance entirely disappearing.

Bates[2] has seen two cases of incipient cataract cured and one greatly improved, apparently by such simple measures as drinking at least three quarts of water a day, moderate exercise and proper personal hygiene. According to W. O. Moore[10] the use of potassium iodid in syphilitic patients may cause the disappearance of incipient cataract. G. O. Ring[15] mentions the disappearance of well-marked lens opacities in a case of double optic neuritis, of specific origin, after the administration of potassium iodid. The case was seen by the late W. F. Norris, who observed at once that the patient had incipient cataract.

According to Norris[12] Koenig has seen the clearing of cataractous opacities in a case of uric acid diathesis, and mentions the resumption of lenticular transparency in an arthritic patient with incipient cataract, after a course with Contrexéville waters.

DIABETIC CATARACT.

There is ample testimony as to the improvement of lenticular changes in glycosuric disorders. Koenig[8] observed the clearing of a diabetic cataract, with improvement of vision from counting fingers to 1/3. Seegen has reported the spontaneous absorption of diabetic cataract. Fuchs mentions the partial disappearance of lenticular opacities in diabetes after the prompt and successful administration of the "Carlsbad cure." W. A. Moore[10] speaks of the use of Carlsbad water and general dietetic and hygienic treatment effecting the disappearance of diabetic cataract. He also reports a case in which floating bodies in the vitreous and peripheral opacities in the lens in a diabetic woman of 50 partially cleared with the diminution of glycosuria. The opacities became denser as the glycosuria increased, until the lens was quite cloudy. On the disappearance of the severe diabetic symptoms the lens gradually cleared, although the vitreous opacities remained. The fundus appeared normal. The patient died three years later, without showing further changes in the intra-ocular media. DeSchweinitz[19] relates an instance of a similar nature in a myopic woman of 50, with 10 per cent. of sugar in the urine. Corrected vision at first examination was 6/7.5 and 6/9. By the suitable changing of lenses and rigid dietary precautions the cataractous process was kept stationary for nearly two years. Later, after discontinuance of strict dietary restrictions while undergoing treatment in an institution for the "absorptive treatment" of cataract, there was rapid increase of opacity, and, subsequently, extraction in Europe of two complete cataracts. Nettleship[11] says that diabetic cataract may disappear entirely, and he reports a case in which the lens completely cleared on the subsidence of severe diabetic symptoms. Appenzeller reports a somewhat similar case.

THE "NON-OPERATIVE" TREATMENT OF CATARACT.

An inquiry into this subject is a natural sequence to the foregoing observations. From time to time alleged cures of cataract without operation have been described by numerous charlatans, religious fanatics and many kinds and conditions of irregular "paths." Occasionally the "cures" are the result of the application of "absorbing drops" containing mydriatics or miotics, which may increase vision in limited or discrete peripheral or central opacities. It might be here noted, however, that occasionally prolonged mydriasis may cause rapid increase of cataract, as is sometimes seen after preliminary iridectomy, leaving the patient worse than before the treatment.

Often the explanation of the "cures" may be found in an incorrect diagnosis, either through ignorance or with nefarious intention. A curious explanation of some of the miraculous cures in religious devotees is *dislocation* of the opaque lens by violent prostrations before a shrine or altar. Curious cases of this kind have been reported by Ramos[14] and Santos Fernandez.[18]

Many varieties of instruments for applying massage and electricity to the eye to dissipate lenticular opacities have been offered. In one popular apparatus the "electricity" is clearly due to the vapor of oil of mustard. Sad to say, there are villainous impostors who are attempting to treat by mail cataract and even such a fatal disease as glaucoma. Powerful drugs and dangerous apparatus are sent to innocent and ignorant patients, who risk, not only the dangers of delay, but also improper and sometimes distinctly fatal treatment. I know of one case of hemorrhagic retinitis that speedily ended in fatal cerebral hemorrhage while under the care of a refracting optician; and I have also been told of an instance of detachment of retina in a highly myopic eye, which followed the use of a widely advertised apparatus for ocular massage. It seems likely that vigorous massage in incipient cataract will hasten rather than dissipate opacity of the lens.

A surprisingly great number of persons throughout this country are taking the so-called absorptive or resolvent treatment for all forms of eye affections. There is no doubt that this is often distinctly injurious and it is claimed that the normal consistency of the cornea is greatly weakened, and liquefaction of the vitreous is not unusual in these cases.

From more purely medical sources there have been many efforts to produce absorption of lenticular opacities by local applications. The aims in this direction have been to furnish nutriment to the impoverished or vitiated intra-ocular structures or to apply locally or administer constitutionally some solvent or discutient substance. Arsenic, strychnin, phosphorus, cannabis indica, thyroid extract, hydrocyanic acid, potassium cyanid, castor oil and its derivatives, cineraria maritima, pulsatilla, aromatic oils, thiosinamin, and many other drugs have been proposed and tried without avail. Electricity was in vogue some years ago, but is now generally discarded, except by advertising charlatans.

In 1891 Kalish,[7] after discarding all drugs, evolved a form of treatment of uncomplicated immature cataract, including strict bodily and ocular hygiene, careful and repeated refraction, a special form of manipulation and the instillation of a mixture of equal parts of glycerin and 1 per cent. solution of boric acid in rose water, for which he claimed good results in several cases. In a recent paper, despite the lack of support and unfavorable criticism for nine years, he still maintained the beneficient results of his method, and claimed 69 successful results in 118 eyes, with even higher percentage in his very recent cases. It has been suggested that the local manipulations and instillations are a minor element in his success. Recently Badal[1] remarks that he has apparently checked incipient cataract for eighteen months and for two years by instilling twice daily a few drops or applying with an eye cup from one to two minutes to the open eyes a 2.5 per cent. solution of either sodium or potassium iodid. He claims that the salt is readily absorbed. Ocular baths of solutions of sodium salicylate have also been recommended in France for arresting the progress of incipient cataract.

PARACENTESIS OF THE ANTERIOR CHAMBER.

In the treatment of incipient cataract, paracentesis of the anterior chamber was advocated by Sperino of Turin in 1862, who published an account of 45 cases with promising results; in some, perfect restoration of vision. In 1865, Sir David Brewster, in a paper before the Royal Society of Edinburgh, claimed that he had cured himself of incipient cataract by repeated paracentesis of the anterior chamber. His thought was that a fresh secretion of aqueous might contain a less proportion of albumin and so counteract the desiccation of the lens fibers. He also suggested the injection of distilled water or a fluid equivalent to healthy aqueous in the anterior chamber after paracentesis. Hogg[6] carefully followed Brewster's experiments with negative results.

SUMMARY.

1. There is no question as to the authenticity of many reports of the spontaneous disappearance of senile cataract, and these cases may be explained and classified in five groups as follows:

a. Cases in which there was absorption after spontaneous rupture of the anterior or posterior capsule.

b. Cases in which there was spontaneous dislocation of the cataractous lens.

c. Cases in which there was intra-capsular resorption of the opaque cortex and sinking of the nucleus below the axis of vision after degenerative changes in Morganian cataract, without rupture of the capsule or dislocation of the lens.

d. Cases in which there was complete spontaneous resorption of both nucleus and cortex without reported history of ruptured capsule, dislocation or degenerative changes of the Morganian type.

e. Cases of spontaneous disappearance of incipient cataract without degenerative changes or marked difference in the refraction.

2. It is not uncommon for opacities of the crystalline lens or its capsule, the result of traumatism, to disappear, even when the capsule has been penetrated.

3. Too much stress can not be laid on the value of personal hygiene, treatment of associate local and general disorders, careful and repeated refraction, and the proper use of the eyes in arresting the progress of incipient cataract.

4. In certain complicated cases, secondary to grave nutritional disturbances, lenticular opacities may entirely disappear under appropriate treatment.

5. Generally speaking, the so-called "non-operative" treatment of cataract as practised by advertising charlatans and irregular physicians is worthless, often distinctly dangerous, and consists in no beneficient measures not known and appropriately used by all reputable oculists.

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DISCUSSION.

Dr. H. V. Würdemann, Milwaukee, sent a communication (which was read by Dr. N. M. Black) concerning cases of lenticular opacity (cataract) cured or relieved by treatment, as follows:

Case 1.—Miss A. P. of Manitowoc, age 28; school teacher, cashier and librarian; first seen Feb. 2, 1895; came on account of diminished vision which was not sufficiently relieved by glasses which she was wearing, which were —5.00 spheres; general health said to be good, but eyes had been getting more short-sighted for years. Without glasses R. and L. = fingers at 2m. With correction R. —6.00 ○ —.50 — 180°; L. —6.00 ○ —.50 180° = 6/12. Examination under mydriatic showed marked radiating lenticular opacities, the lens segments being well marked, the opacities extending from the periphery nearly to the center of the lens; ophthalmoscopic examination showed marked congestion of the optic discs and choroiditis. Treatment by atropin, rest and correction of the refraction, syrup of the hypophosphites compound, later pil. Blaud, which was not well borne and for which the hypophosphites and the bromid of gold, arsenic and mercury were substituted.

Sept. 9, 1895, the lens opacities had almost disappeared, only a few striæ being observable; under mydriasis the vision then R. and L. = 6/6. The case was seen steadily several times a year until May 28, 1900, when V. in R. was 6/8 and L. 6/12; opacity of the lenses again plainly observed and greater in right than in left. The vision remained stationary for a year, when, in September, 1901, she went to work as cashier in a dry-goods store in a small town; in December the vision had decreased to R. 6/8; L. 6/18, the opacities in lenses increasing; work was then discontinued and treatment with the gold, arsenic and mercury internally given; May 14, 1902, the opacities were found to have greatly decreased, the vision being 6/8 and 6/12; choroiditis was not observable; patient had greatly improved in general health and made up her mind that use of her eyes for near work was not consistent with preservation of sight. At this date, June 26, she is in good general health. This patient is yet under general observation.

Case 2.—Sept. 23, 1897, F. P. of Oshkosh, age 17, schoolboy, came complaining of greatly diminished vision in the right eye and jerking of the left. V. R. 5/25 eccentrically; L. 5/4 with vertical nystagmus on monocular fixation, right sclerotic congested; tension —1.00, semilunar ring of lenticular opacity, turbid vitreous, nasal portion of fundus could not be plainly made out and at first retina was supposed to be detached. Later this cleared up so that extensive vitreous opacities were made out. Spots on the posterior surface of the cornea were plainly seen and the condition was diagnosed as uveitis. In the left eye one discrete spot of choroiditis was apparent. The young man was greatly troubled with stomach and intestinal indigestion; was eating everything, and particularly sweets and starchy foods. Blood examination was normal, excess of uric acid and urates in urine; the patient was greatly troubled by flashes of light and photophobia. Treatment was instituted by rigid diet and regimen, administration of mercury by inunction, several pilocarpin sweats and later iodid of mercury and medication of the bromid of gold, arsenic and mercury. Under this form of treatment the uveitis gradually subsided, the lenticular and vitreous opacities becoming absorbed, the latter entirely so; Feb. 3, 1897, having almost entirely disappeared. In the left eye at this date the choroiditis was more marked, being of the disseminated variety. Aug. 13, 1898, V. R. =fingers ½m.; L. 6/8; mixed treatment was instituted. The right eye at one time became divergent, but as the iris regained its normal color and mobility it became parallel with the other. Patient was lost sight of for about a year. When he returned Feb. 15, 1902, he was found to have become a heavy, hardy man; the left eye being normal, while in the right the nerve and retina were atrophic, the eye having become useless, the vision being reduced to light perception and the lens was found to be slightly opaque. No further indications for treatment at this date.

Case 3.—Mrs. A. B., age 41, first seen June 27, 1898, with small error of refraction: R. +.50 ⌒ +.37, 180°; L. +.75; returned June 30, 1899, when the refraction was to have changed to R. +.25 ⌒ +.25, 180°; L. +.62 ⌒ +.25, 180°. On both these occasions a cycloplegic was used. Aug. 29, 1901, the refraction had not changed, but the vision with the above glasses was 6/18; examination with mydriatic showed cortical, peripheral and nuclear cataract. Advice to stop all near work was given and treatment by the bromid of gold, arsenic and mercury administered. November 27 the vision R. = 6/12; L. 6/8; the opacities in lenses increasing, some stellate in the right and the sectors of the lenses showing distinctly. Dec. 12, 1901, vision R. 6/12; L. —6/24; treatment continued. March 21, 1902, vision R. 6/12; L. —6/12; sent to Dr. Casey A. Wood of Chicago in consultation. The lens opacities were much less than at previous visit. June 1, 1902, lens opacities lessened in amount and vision both eyes 6/12. I could at no time satisfy myself that choroiditis was present. In spring of 1899 the patient married a physician, an old gentleman whose sight was failing on account of central atrophy of the choroid and retina, and she read a great deal to him. At this time the optic nerve head and the choroid were found to be much congested; advice to stop all work was given. In July, 1902, she went east and was seen by Dr. Pyle in Philadelphia. This patient is yet under general observation.

The above three cases are the only ones that I have seen in special practice of fourteen years which have been observed sufficiently long to determine the disappearance or modification of opacities of the lens in comparatively young persons. In all three cases there was choroiditis. In two of these marked overuse of the eyes was manifest. In two of them there were disorders of nutrition. In all three the choroiditis was relieved by treatment, and with it the nutrition of the lens was sufficiently improved so that the lenticular opacities have been made to disappear. The vision in two of the cases has been kept nearly normal; in the other the result has been atrophy of the optic nerve and retina. I have seen a comparatively large number of cases of stationary lenticular opacities of the cortex; the most of them having the radiating or wheel form, and in most cases the opacities being most prominent in the lower nasal quadrants, occurring in persons over 60 years of age. While these may be termed "cataract," yet in such cases to the patients or even to physicians I prefer to call them "opacities of the lens of stationary type."

Dr. L. H. Taylor, Wilkesbarre, Pa.—That many cases may remain stationary or vision slightly improve is well known to all of us, and I believe, moreover, that in some cases the opacities will entirely disappear. I have in mind the case of a man who visited an excellent oculist in New York some years ago, and his case was pronounced one of cataract, and he was told that it would be ready for operation within a year. I saw him some years afterwards and the opacity had entirely disappeared and there was no sign of cataract. He had slight myopia in one eye and hypermetropia in the other. He died at the age of 68 without having had any return of the trouble. I have seen one case of diabetic cataract in which the opacity disappeared. It was thought that where a foreign body had injured the lens it would be followed in any case by traumatic cataract, but a number of cases have been reported now—Dr. Baker has reported some, and Dr. Pyle has spoken of many, and I have seen one marked case—where such opacity has cleared up; where the patient received an injury to the lens and I thought it would be undoubtedly followed by traumatic cataract, but under rest and the use of the pressure bandage it entirely cleared up.

Dr. E. V. Appleby, St. Paul—Sixteen months ago I removed a small piece of iron from an eye with the Haab magnet. There was a small penetrating wound of the cornea as well as of the iris. One could, by placing plus lenses in front of the ophthalmoscope and diminishing their strength one by one, trace the path of the foreign body through the lens. The small foreign body could be seen in the lower portion of the vitreous about as far back as the equator. Owing to its smallness I applied the magnet so that its power lines would attract the iron in the direction of the zonula. After a few moments there was a bulging forward of the iris at about 30 degrees from the vertical toward the nasal side. The current was then broken and the power lines of the magnet were then directed so as to attract the particle downward and forward. After endeavoring several times in this way to draw the foreign body into the anterior chamber I made an iridectomy, hoping to get the iron as well as the iris. Although the iridectomy was made over the side of the bulging in the iris, still the iron remained. On reapplying the current a sharp click was heard and on the magnet tip was seen a small particle of iron. On one side of this fragment of iron was a small, fine, hook-like process which evidently had been the cause of the great difficulty of extraction. Three weeks ago the vision of this patient was 20/30 and better. I regret to say that I did not dilate the pupil in order to determine whether or not the track in the lens was still visible.

Dr. E. C. Ellett, Memphis, Tenn.—We know that sclerosis of the lens and consequent shrinking begins very early in adult life, and this shrinking and reduction in size is compensated for by the formation of new lens fibers from the cells underneath the anterior capsule of the lens. Now, anything that [illegible] with the growth of these fibers permits the contraction of the center of the lens to go on without the reduction in size being compensated for by the formation of new fibers at the periphery, and the result is that the shrinking of the nucleus forms spaces between the lens fibers due to their separation, which are the early opacities we see in incipient cataract. Anything that interferes with the growth of these fibers, whether constitutional disorder, or senility, or anything that prevents the formation of new fibers, to make up this loss, will allow the formation of opacities in the lens. Anything that will restore the activity of the formation of new lens fibers, which, of course, is more apt to be brought about where the trouble is a constitutional disorder, will permit the fibers to form again and the spots or spaces will be wholly or partially obliterated. It seems to me that is the explanation for the partial or complete disappearance of lens opacities.

Dr. Myles Standish, Boston—I am brought to my feet by the remark of one of the gentlemen that sometimes a lens injured by a foreign body does not become opaque. We can select with considerable accuracy the injuries that will not cause opacity. It is always where the foreign body is extremely small and when it goes through the lens in such a manner as to produce a minute wound in the capsule that will promptly heal and so prevent the aqueous soaking into the lens and the resulting increase of opacity. I have seen such tracts persist for many years without any increase in the opacity. But when a large, lacerated wound in the capsule is made the lens is doomed.

Dr. Harry Friedenwald, Baltimore—Dr. Pyle has mentioned the very ill effect of a certain form of treatment recently much in vogue in our part of the country for cataract and all other ocular affections, and has known detachment of the retina to follow. I have seen a case of this kind; the treatment was followed by severe pain lasting several days, and when the patient entered our hospital he had acute glaucoma; iridectomy and extraction of the swollen lens had to be performed to save the eye.

Dr. Lucien Howe, Buffalo, N. Y.—As to the question of the clearing up of these opacities, it strikes me there is an opportunity for some investigation. A few years ago I had occasion to puncture the lens in a young rabbit, and noticed that a number of opacities of considerable size did clear up. It is a field for some of the young men to study, and that is a way to settle some phases of this question.

THE ANATOMY OF THE OCULAR MUSCLES
AND THEIR ACCESSORY STRUCTURES AND THE PHORIAS AND TROPIAS.*

J. ELLIOTT COLBURN, M.D.

CHICAGO.

The following observations are based on the study of 200 cases examined for errors of refraction and lines of regard. Measurements were taken with the following objects in view: To determine the relation of the orbits to the plane of the face in the anomalies of refraction and the relation of the visual lines to the varying positions of the axes of the orbit, also to obtain suggestions for a possible anatomic cause or the varying so-called anomalies of the extra-ocular muscles and to explain the anomalies of the line of regard.

Taking the horizontal plane as measured through the attachment of the orbicularis-palpebrarum for the transverse direction (Fig. 1), and from the same points to the fossa on the superior maxilla toward the median line and over the root of the canine tooth for the vertical direction (d, d), we have for our purpose the base lines of the plane of the face. From these lines the following measurements were made to determine the angles of the plane of the orbit to the plane of the face: Plane A, the relation of the base orbit to the horizontal plane of the face (Fig. 2); plane B, the relation of the plane of the orbit to the vertical plane with the brow elevated to expose the rim more perfectly (Fig. 3); plane C, the declination of the longest diameter of the orbit from the horizontal plane (Fig. 1, c, c).

The next step in measurement was to determine the relative position of the two eyes to the plane of the face (Fig. 1). This was done by adjusting a wire screen in front of the face, using the fixed points previously indicated, then observing the relation of the pupil to the vertical and horizontal planes and observing the deviations from the symmetrical form. After analysis of the cases I have classified them in the following manner:

Class 1.—Hypermetropic type with plane A at an angle ranging from —15 to +15; plane B, inclination from —10 to +20, and plane C, declination ranging from +25 to +40 (Fig. 5).

Class 2.—Myopic type, plane A, at an angle ranging from +10 to +35; B, from —5 to +30 and C, from +15 to +50 (Fig. 4).

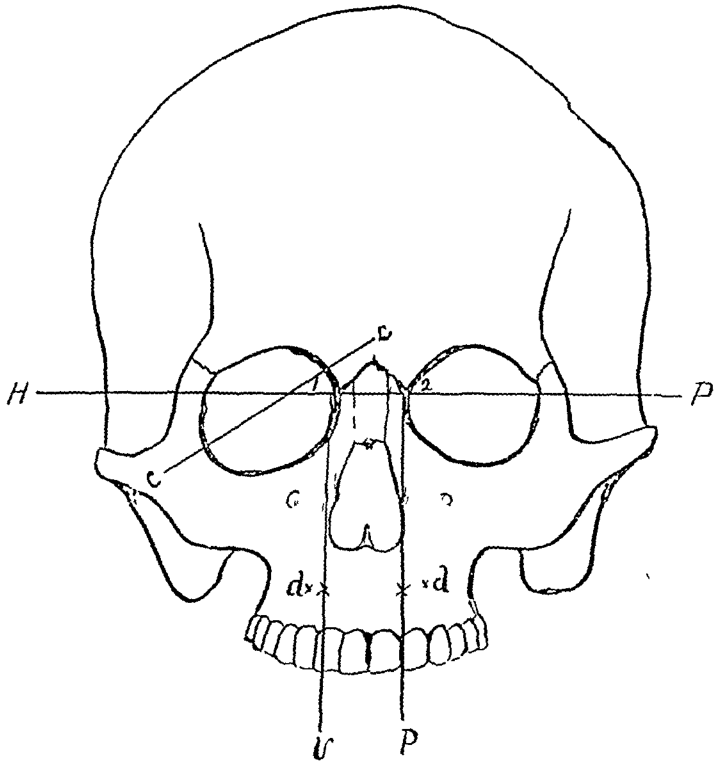

Fig. 1.—H P, Horizontal plane; 1, 2, attachments of the orbicularis palpebrum; V P, vertical plane; d, d, canine fossa; c, c, direction of largest diameter of the orbit.

Class 3.—Emmetropic type, Plane A, at an angle of +10 to +15; B, from +10 to +15, and C, from +15 to +40 (Fig 3).

The width of the anterior portion of the ethmoid cells at the nasion, from the internal nasal process of the frontal bone of one orbit to the corresponding point of the fellow orbit, varies indirectly with the distance intervening between the apices. The right eye is usually higher than the left, and the plane of the base of the right orbit is less inclined toward the plane of the face than the left. Where the reverse condition obtains, even when it is slight in degree, it becomes noticeable, so habituated are we to the left being the lower eye. Right hyperphoria occurred to some degree in 75 per cent. of all cases examined.

While the rim of the orbit is irregularly oval, the cavity is that of an irregularly quadrangular pyramid, and its axis is both depressed 10 degrees and divergent 20 degrees from the planes of the face. The apex half of the floor of the orbit is usually on a higher plane than the base half. The eye is suspended in the superior 5/6 of the orbit.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

The visual lines are directed higher when planes B most nearly approach the plane of the face and lower where the angle is greater. The visual lines tend toward the median line of the face when the plane A is less than +15, and further away from it when it is greater. The more nearly the longest diameter of the orbit approaches the direction of the horizontal plane of the face the less the declination of the retinal meridians. A line drawn at right angles to the plane of the base will give, as a rule, the direction of the axis of the orbit. In measur- ng the orbital planes and angles on the living subject he operator must see that the brows are elevated so as to llow the instruments to rest firmly against the bony tructure with a minimum amount of soft tissue intervening. In the hyperopic type it was found that the distance at the nasion averaged 30 mm., in the myopic 38 mm., in the emmetropic 35 mm. In the hyperopic type the lines of regard are usually directed higher and in the myopic lower than normal.

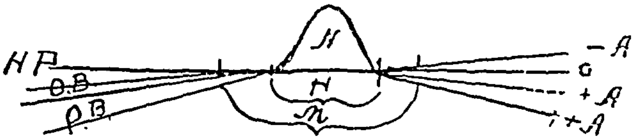


Fig. 2.—H P, Horizontal plane of face; A A, orbital base plane A, + or —; N, nasion; H, hyperopic; M, myopic.

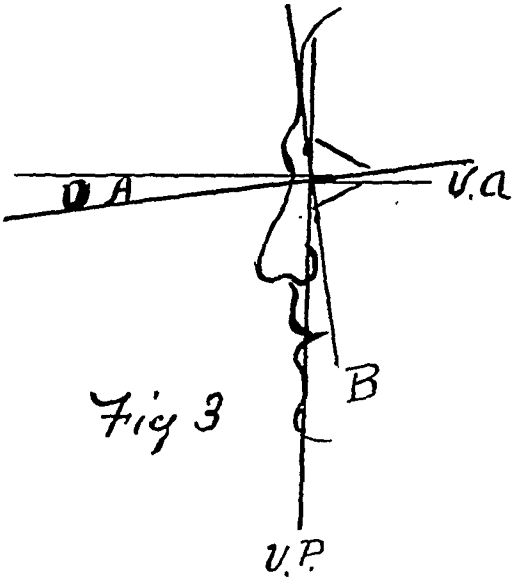


Fig. 3.—B, Vertical direction of orbital base; plane B.

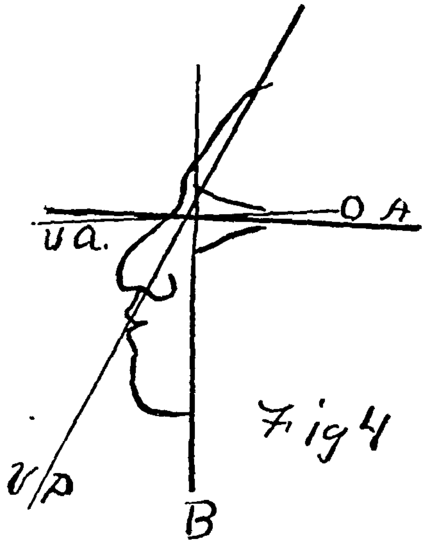
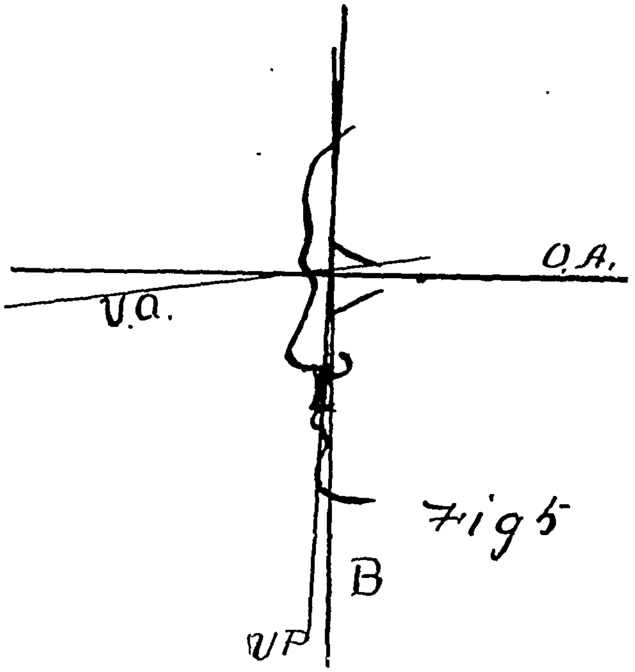


Figure 4.

In the symmetrical male adult skull the depth of the orbital cavity is about 45 mm., the nasal wall 55 mm., the temporal wall 60 mm. In the hyperopic type: nasal wall 53 mm., temporal wall 52 mm. The nasal wall corresponding more nearly to the symmetrical skull. In the myopic type: nasal wall 56 mm., temporal wall 55 mm. The deviation or tendency of the lines of regard is toward the relatively short walls of the orbital cavity. The prepared skulls from which measurements were taken to determine the relations of the orbital cavities to the plane of the face were selected by taking the measurements, as hereinbefore indicated, and comparing them with those corresponding to the living subject. The two orbital cavities of the same skull may differ in declination and deviation of their axes. In a patient with a high point of regard and a great deviation on one side with a normal condition on the other, a phoria or tropia may result. In this class of cases the operation should be to secure the full result by correcting the eye of the deviating orbit.



Figs. 3, 4, 5.—Position of head in various angles of plane B; O A, V A, orbital and visual axes.

In addition to the bony structure we must take into consideration the muscles and their accessories: the suspensory structures, the check ligaments, capsule of Tenon and the anterior orbital fascia. In the emmetropic type the internal rectus is shorter than the external rectus, the sheath of the muscle and its check ligaments are heavier and less perfectly differentiated. The inferior rectus is shorter than the superior rectus and the connective tissue structures are more plainly made out. The orbito-muscular check has been well described by Motais and others. I have found another, and, so far as I can make out, constant set of fibers and bands which spring from the periosteum of the orbital wall about 15 mm. from its rim and extend forward, enclosing and blending with the sheath of the muscle, interlacing with the anterior orbital facia and blending with the anterior fibers of the capsule of Tenon and attaching with it to the anterior portion of [illegible] globe one or two mm. back from the sclero-corneal junction. These bands form an almost continuous membrane, being clearly made out on the nasal side and least clearly marked on the roof side of the orbit. These structures may be denominated the orbito-ocular check, and be schematically illustrated as in Fig. 6. They seem to retain the eye in its position when the recti muscles are severed or paralyzed, and steady the movement of the eye when the opposing muscle is called into action.

In the hyperopic type the internal rectus muscle is relatively short, the check ligaments are heavy, clearly made out and have numerous bands of adventitious attachment, preventing the free rotation of the globe and embarrassing the action of the abducting muscles. The checks to the inferior and superior recti are well marked, but those of the external recti are very rudimentary. The external rectus muscle is thin, the aponeurotic expansion difficult to make out. The muscle in cases of squint is usually relatively too long, and the squinting eye low in power and slow in action. In physiologic or hereditary myopia the external rectus is relatively the stronger muscle and its adventitious tissues much better developed, and in exotropia the internal rectus is relatively too long, its checks thin and difficult to demonstrate. The conclusion would be that the atypic development extends to the static and dynamic soft structures, and that the relatively short side is imperfectly developed, and in this lies the primary cause of the errors in the direction of the lines of regard.

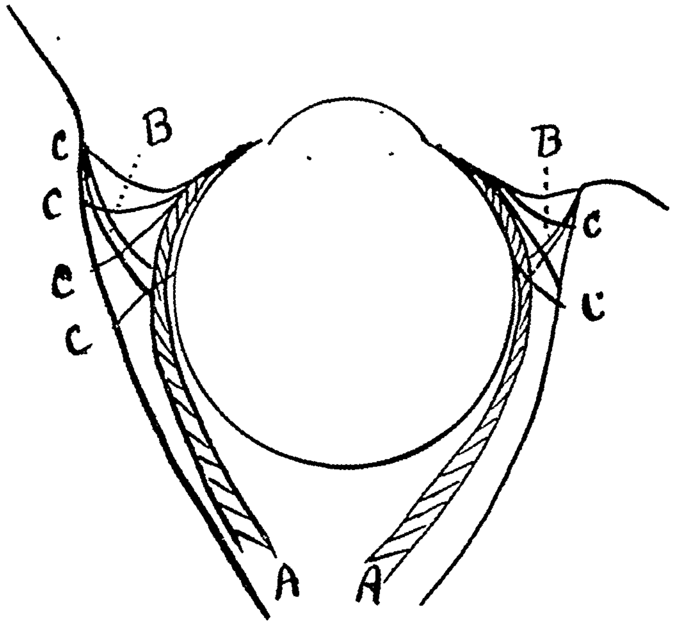


Fig. 6.—Schematic drawing showing: A, the external and internal recti muscles; B, orbito-muscular check ligaments; C, orbito-ocular check ligaments.

It will be found in the hyperopic type that the axes of the orbital cavities cross much further back than in the other types, and that the bases are nearer together at the nasion. The nasal side of the orbit is relatively shorter than the temporal, and the internal rectus muscle and its connective tissue accessories are less perfectly developed. The external rectus is narrower than the internal, the inferior rectus attached to the globe by a narrow tendon and a thin annular ligament. The external orbital and ocular checks are thin, delicate and often only partially developed.

Case 1.—The following are the measurements of a hypermetropic patient (Mrs. H., aged 26). R. and L. V. = 20/200 + 4.50 V = 20/20, head medium or high, face very broad through the horizontal plane, facial angle = + 10. R. plane A — 5, B = + 5, C, = + 10. Left plane A = + 10, B = 20, C= 15. Right orbital crest 15 mm. higher than the left. Right hyperesophoria = 6 to 18, head posed forward and to the right. There were no symptoms that would in any way suggest that the eyes were a source of irritation as long as the full correction is worn, or as the patient is allowed to pose the head to correct the phoria. As soon, however, as the head is forcibly held in the primary position, asthenopia and vertigo result and an attack resembling migraine soon follows. In this case there is a history of periodic squint lasting about three months following some infantile disease.

The error of refraction was not corrected until her 18th year. Then the conjunctiva was opened and the tendon exposed; there was found to be an uninterrupted band of connective tissue extending from the internal rectus to the superior rectus blending with the orbito-ocular check. With the severing of this band the hypertropia disappeared and the pose of the head was corrected though the heterophoria could still be made out.

The following case is cited to illustrate the result of a complete tenotomy of the internal rectus muscle in a hyperopic patient with orbits of low divergent angles and a short orbito-muscular check ligament.

Case 2.—Mr. L., aged 34, when 14 years old was operated upon by an eminent English physician for the correction of squint. He was not refracted until he visited me twenty years later. About one year after the operation, the eye, which had become slightly divergent immediately following the procedure, became markedly exotropic and fixed in its position. The conjunctival cicatrix showed that the operation had been made with a broad incision, rather far back from the muscle attachment. In preparing for reattachment the conjunctiva was opened and freed from its cicatricial adhesions, but no trace of the internal rectus could be found. I was able to make it out, however, as being held away from the globe and resting against the wall of the orbit (Fig. 7). After some difficulty in separating it from its surroundings, I attached it to its original insertion; *not, however, until* I had freed it from its check ligament (b), which was much contracted. After fixing the muscle in position, I found that, though I had forcibly stretched the internus, the eye could only be moved by the patient to the median line. I then opened the conjunctiva over the external rectus and found that there were bands (c) of connective tissue which passed from the orbital wall to the ocular wall, which would not allow free movement of the eye inward. I carefully dissected away these bands and was able to rotate the eye to its full extent inward. The patient could not, however, rotate the eye beyond the median line. The musculo-orbital of the internal check was severed (d), and the movement of the eye was free to the extreme limit of adduction. Plane A was on a line with the horizontal plane of the face, plan B inclined + 5, plane C + 10, base of the orbital cavity very small and relatively long. I present you a drawing made

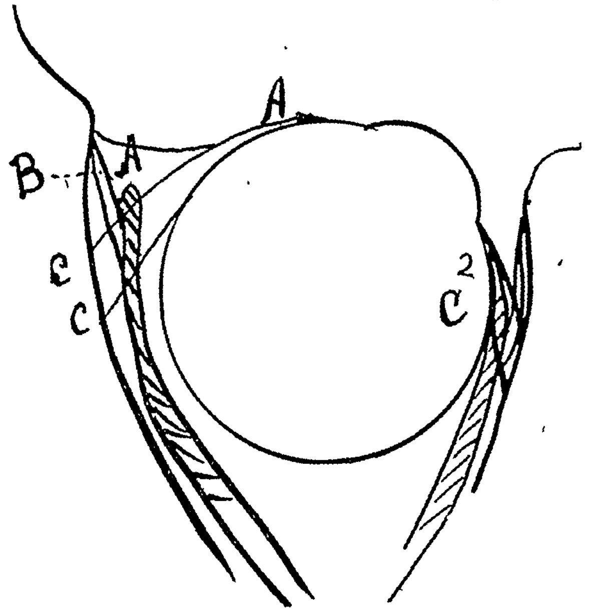


Fig. 7.—A, Cut end of internal rectus; B, its orbito-muscular check; C², the contracted orbito-muscular check of the externus.

at the time, illustrating, somewhat schematically, the condition found.

In January, 1890, I had the opportunity to make a dissection in a case of double convergent squint.

Case 3.—The patient, 24 years of age, had consulted me four months prior to her death. She had at the time fair vision: 20/60, head posed to the left, left eye fixing; vision 20/80, head posed to the right, right eye fixing. The range of rotation was exceedingly small, with a slight torsion nystagmus.: Refraction: +4.00 sph. for each eye. Vision for right eye equaled 20/30, for left 20/20 minus. In death the eyes were almost as markedly convergent as in life. The lids were retracted and the conjunctiva dissected from the corneo-conjunctival junction. The globe was filled with hot paraffin (melting point 100 F.). After staining with methyl blue, the orbit was also filled with hot paraffin. A section was then made, with a saw, through the orbit. The drawing which I present to you shows the condition found. The orbital fascia of the fellow eye was carefully dissected, great care being taken to expose the structures in layers. I can only imperfectly illustrate the condition. (Figs. 8 and 9.)

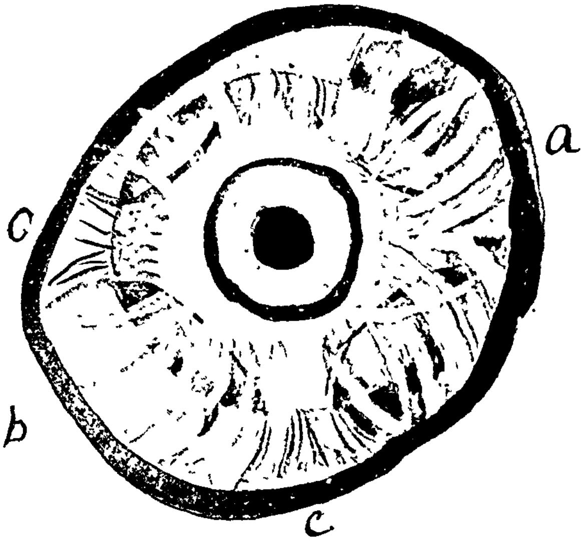


Fig. 8—a, Superficial connective tissue band (schematic); b, deeper connective tissue band; c, check ligament of the external rectus muscle.

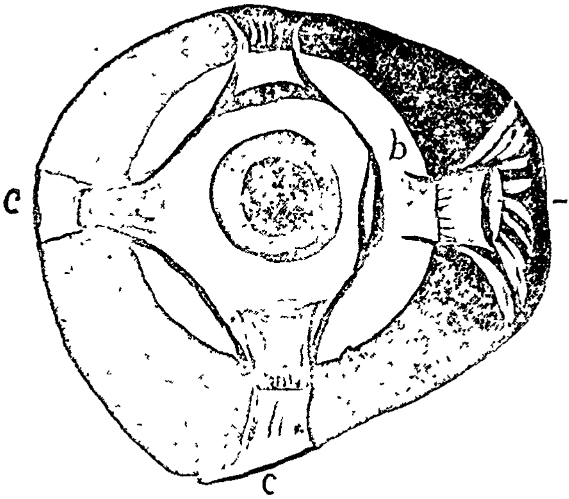


Fig 9—Semi schematic drawing; a, orbito muscular check (cut end of internal rectus): b, orbito-ocular check, forming adventitious attachment between the muscle and the globe; c, c, c, orbito muscular check of the superior, inferior and external recti muscles.

In the case which we have under consideration the head would be classified as medium or high, tending to be broad. The measurement at the nasion is 23 mm., the apices are estimated to be 28 mm. apart and the planes A = —5, B = +20, C = +5. The facial angle = — 10. Orbital axes = 15 with a depression of 10.

The following history is used to illustrate a case of heterophoria occurring in a mixed type:

Case 4.—Mr. B., aged 34, robust general health, sturdy physique, has from early childhood suffered from headache, periodic asthenopia usually during school terms and has attacks of petit mal, but during the past three years these have been infrequent as he has been engaged in active out-of-door life. His military training has forced him to hold the head in nearly the primary position. He is always conscious of an effort to secure and maintain binocular single vision. With the slightest effort diplopia results and the disengaged eye either turns upward and outward or downward and outward as the case may be to a sufficient degree to rid the patient of the confusion of double vision. I have never been able to satisfactorily estimate the total error. Refraction R, V = 20/20, L, V = 20/20. Atropia R, + 1. = 20/20, L, + .75 = 20/20. Head in primary position, field of fixation normal, adduction =20, abduction=16. R sd.=? L sd.=? Orbital planes: Right eye plane A 25, plane B 20, declination = 25. Left eye plane A 12, plane B 10, C 15. You will observe that the plane A in the right eye has a greater angle by 13 than the left, and the plane B is greater by 10 (Fig. 10). We would class his head as broad and flat if viewed from the right side; if viewed from the left side, long and thin. When attention is relaxed the habitual pose of his head is to the left with the chin depressed. An effort was made about six years ago to correct the hyperphoria by a graduated tenotomy and advancement, but shortly after the tenotomies were made the patient was called into active service and the error has not been taken under consideration until quite recently.

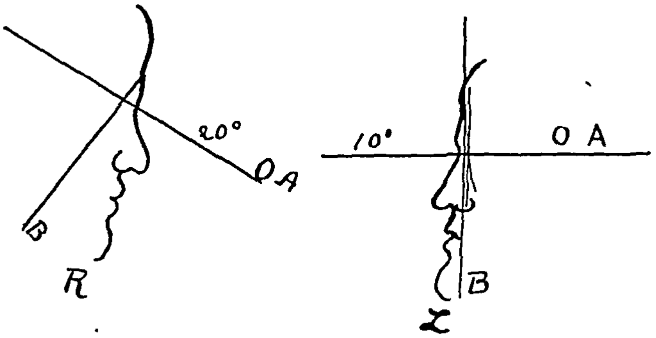


Fig. 10.—Schematic drawing showing the right and left side of face in case. B, direction of vertical planes of orbital bases; O A, direction of orbital axes.

The following observations are the result of my study of cases and the literature on the subject. As a rule, the visual lines are modified in their directions by the relations of the orbital cavities to the plane of the face, and that their bases are, as a rule, guides to their direction. The exceptional cases prove the rule. Stevens, Risley and others have pointed out the relations between certain types of cranial development to certain anomalies of refraction or direction. I have, however, been unable to find any measurements which bear upon this subject from the point of view from which it has been my endeavor to present it, and it may be summed up in the following: The atypic development of the bony structures, connective tissue band and the muscles of direction are the predisposing anomalies of the lines of regard; modifications of nervation are the exciting causes.

In phorias or tropias due to structural conditions we can in many cases by improving the general health and local conditions train the muscles and centers of control to overcome the manifest error though the cause is not removed. The nervous strain remains the same, however, and must be considered in estimating the wear and tear of the body.

In functional heterophoria or heterotropia, operative procedure is not to be considered; it is here that the physician, skilled in physical culture of the ocular as well as the general muscular system, accomplishes so much good. Heterophoria causing eye strain or eccentric pose of the head occurs in asymmetrical orbital placement. A partial or guarded tenotomy, with a section of the orbito-ocular band, and if need be, a shortening or advancement of the opposing muscle and advancement of the orbito-ocular check meets all the requirements and secures the best results in correcting non-paralytic strabismus, which has not responded to a correction of the errors of refraction and ocular training.

The futility of operating for the correction of tropias or phorias in certain extreme types can be readily understood when viewed from the standpoint of the bony structure as entering into the cause of the anomaly, and I believe that many of our relapsing cases, which have been classified, for want of a better term, as neuro-muscular, will find their place in this group. All who have atypic bony structures do not manifest, either in pose or by asthenopia, the symptoms of their type. The soft tissues and muscles are trained to overcome the imbalance to which the static structures would predispose them. It seems from my observations to be also true that the dynamic or static soft tissues may also be alone at fault and be the cause of any of the anomalies of the lines of regard. The check ligament, by being developed, may hamper the opposing abducting or adducting muscle. In complete tenotomy the check ligament may draw the muscle away from and prevent its attachment to the globe. The opposing muscle may be hampered by shortening of its orbito-muscular check ligament, due to habitual malposition of the eye from overaction of one of the recti muscles, from squint, or from malposition of some of the static structures. The orbito-ocular check ligament may become so elongated and attenuated by continual malposition as to destroy its function as a check. Adventitious bands may exist as the result of imperfect development of the orbital fascias, either through excessive stimulation, as the result of trauma or inflammation of the orbital fascias, which may modify the actions of the muscles, and limit the rotation of the globe. A complete unguarded tenotomy may allow so much retraction of the muscle that the range of action of the musculo-orbital check may be such as to limit the power of the muscle which is directed against it, instead of the globe, thereby limiting the field of rotation and fixation.

THE PHYSIOLOGY OF THE OCULAR MUSCLES.*

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In response to the suggestion of our Chairman, this paper has been so written as to review in the simplest possible manner our knowledge of the physiology of the ocular muscles, and many things more or less connected with the subject have been advisedly omitted as nonessential. Two facts should be borne in mind in connection with the reading of this paper: first, that the action of the muscles on normal eyes alone is considered, the disturbing and modifying influences of errors of refraction and abnormalities of the muscles themselves and their attachments, properly belonging to a study of their pathology and not of their physiology; secondly, all muscles are to be considered as moving the normal eye from the primary position.

THE MOTIONS OF THE EYEBALL.

The eyeball is endowed with unusual freedom of motion, for the accomplishment of which it is supplied with six muscles arising from the bony walls of the orbit, and attached by ribbon-like tendons to the sclerotic. Each muscle is directly associated, physiologically, with one or more muscles of the other eye, so that we can not voluntarily call into play the muscles necessary to move a single eye alone, but must at the same time impart some motion to its fellow. For the purpose of study, it is best to consider the movements of each eye separately and then of the two together, and also to inquire first, what motion the eyeball is capable of having imparted to it and then what muscle or muscles are concerned in the production of these several motions. By motion of the eyeball, we mean motion of its visual axis. The only motions of which the eye is capable are those by which the direction of its visual axis is changed. In studying the motions of the eyeball it is customary to call attention first to certain fixed planes, either planes to which visual sensation may be referred for interpretation, planes of reference, or planes along which movements of the visual axis occur, planes of motion or rotation. The latter constitute the planes of activity of the muscles.

THE PLANES OF THE EYEBALL.

The principal planes of reference are two in number: 1, the fixed median vertical plane of the head passing equally distant from the center of the two eyeballs, and 2, a fixed horizontal plane, passing theoretically through the center of rotation of each eye. These planes are, of course, perpendicular to each other and are planes of reference. By comparing the image of any object with these two planes we are enabled to appreciate whether its position is vertical or horizontal or oblique. The planes of motion are two in number: 1, the anterior-posterior vertical plane of the eyeball; 2, the anterior-posterior horizontal plane of the eyeball, coinciding, theoretically, with the fixed horizontal plane of reference. For the sake of completeness we add a third plane, in which lateral motion of the vertical axis would occur if it occurred at all, but we will see presently that it does not occur, hence: 3, the equatorial, or transverse vertical plane of the eyeball. All of these planes of rotation pass through the center of rotation, and at this point a line passing through the plane and perpendicular to it represents the axis of the rotation of which the plane to which it is perpendicular is the plane of rotation. Thus the axis of rotation for movements of the visual axis in the horizontal plane is a line perpendicular to the horizontal plane at the center of rotation. Besides this axis around which lateral rotation occurs, we have the transverse axis around which vertical rotation occurs and the antero-posterior axis around which there is supposed to occur in certain abnormal conditions a rolling or wheel-like motion of the eyeball, called torsion. Of these movements, two are under the control of the will, namely, lateral rotation and vertical rotation. Torsion is not produced under normal conditions, either voluntarily or involuntarily.

The primary position of the eye, or the position which is by common consent taken as the starting-point for the study of all ocular movements, is that position in which the visual axis and the vertical axis of the ball are parallel with the median vertical plane of the head, and the visual axis lies in or is parallel to the horizontal plane of reference. Theoretically, we speak of both eyes being in the primary position, but it is not practically possible for both to be so at the same time, since some convergence of the visual axes always exists.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

THE ACTIONS OF THE MUSCLES.

All motions of which the eyeball is capable can be resolved into either rotation in the horizontal plane of rotation about the vertical axis or rotation in the vertical antero-posterior plane of rotation about the horizontal transverse axis, or a combination of the two. No position of the eye can be conceived which can not be arrived at by rotation about one or the other of these axes, or about first one and then the other. The analogy of the mathematical method of locating a point in space by its coördinates naturally suggests itself. For this reason we choose the vertical and horizontal antero-posterior planes of the eye as the only planes of rotation with which we concern ourselves in the study of those ocular movements whose mechanism it is necessary to understand. Each of the ocular muscles acting alone would produce a definite and constant movement of the visual axis of the eye in a plane called that muscle's plane of rotation and about an axis called that muscle's axis of rotation. The plane of action of any muscle is determined by three fixed points, namely, the center of its origin, the center of its insertion and the center of rotation of the eye. The axis of rotation of any muscle is a line passing through the center of rotation perpendicular to that muscle's plane of rotation. We find that the anatomic arrangement of the six ocular muscles is such that they may be considered in pairs, the two members of each pair being to a certain extent antagonistic in their action. To each pair belongs a common plane and axis of rotation. Of the internal and external recti, their plane of rotation is the horizontal plane of the eyeball, their axis of rotation the vertical axis of the eyeball. Of the superior and inferior recti, the plane of rotation passes outward from the apex of the orbit, where they arise, through the centers of their insertion on the upper and lower portions of the globe, and makes an angle of 27 degrees with the vertical antero-posterior plane of the eyeball. The axis of rotation of these muscles, therefore, makes an angle of 27 degrees with the equatorial plane of the eyeball. The superior and inferior obliques have to all intents and purposes corresponding points of origin at the inner angle of the orbit and corresponding points of insertion at the postero-superior and postero-inferior quadrants of the ball respectively. The plane of rotation of these muscles is vertical and makes an angle of 39 degrees with the equatorial plane of the eyeball, their axis of rotation making the same angle with the vertical antero-posterior plane of the eyeball.

The production of motion in a normal eye is denied to the oblique muscles. Neither voluntarily nor involuntarily is a normal eye ever rotated about its antero-posterior axis by the action of these muscles. The only such motion that we can demonstrate is that of so-called "false torsion" seen with the after-images of a bright line, and when this occurs it is due to the action of the vertical recti. The function of the oblique muscles is to prevent motion, not to cause it. With the question of torsion as produced by these muscles in abnormal eyes it is not the province of this paper to treat.

THE TERMINOLOGY OF MOVEMENTS.

The terminology of the ocular movements is in a state of considerable confusion. No two writers agree in their meaning for the same word. Thus, by duction, Maddox would imply any movement of the visual axis; Duane applies it only to movements of one eye; and Savage to the ability of the eyes to overcome a prism. It seems to me that this Section could well occupy itself with advising and stamping with its official approval a complete nomenclature of ocular movements. I would suggest as a temporary table at least, a sort of composite arrangement, as follows:

MOVEMENTS OF THE VISUAL AXIS.

A. Of a single eye (ductions).
  a. Movements of the V. A. outward = abduction.
  b. Movements of the V. A. inward = adduction.
  c. Movements of the V. A. upward = superduction.
  d. Movements of the V. A. downward = subduction.
B. Of both eyes.
  1. Associated conjunctive movements (versions).
    a. Movements of both V. A. to right = dextroversion.
    b. Movements of both V. A. to left = levoversion.
    c. Movements of both V. A. upward = superversion.
    d. Movements of both V. A. downward = subversion.
  2. Associated disjunctive movements (vergences).
    a. Inclining the V. A. toward each other = convergence.
    b. Inclining the V. A. away from each other = divergence.
    c. Inclining one V. A. higher than the other = supervergence (right and left).

SPECIAL TERMS TO DENOTE THE EXTENT OF ASSOCIATED DISJUNCTIVE MOVEMENTS AS MEASURED BY PRISMS.

a. Ability to overcome prisms bases outward = prism-convergence.
b. Ability to overcome prisms bases inward = prism-divergence.
c. Ability to overcome prisms bases downward or upward = prism supervergence (right and left).

Movements of the vertical axes only occur as a pathologic condition, and for this we already have a terminology, viz., cyclophoria (plus and minus) and cyclotropia (plus and minus). The use of the words coined by Maddox, intorsion and extorsion, may be justified to signify that we do not mean a pathologic condition, but what would occur if the vertical axis was capable of physiologic movements, or that we mean motion and not states. Thus, an eye undergoes intorsion, and becomes in a state of minus cyclotropia. Hence it is well to add:

MOVEMENTS OF THE VERTICAL AXIS (TORSIONS).

a. Movements of the vertical axis outward = extorsion.
b. Movements of the vertical axis inward = intorsion.

All of the ocular muscles are concerned in every ocular movement, either directly in producing the movement, or in preventing excessive movement, or movement in some other direction. Knowing the plane of rotation of each muscle we can state directly the effect of its action, and this can be quickly demonstrated and readily understood by performing the rotation on a model made of a rubber ball and knitting needles in imitation of Landolt's ophthalmotrope.

THE ACTIONS OF EACH MUSCLE.

The following table shows the principal and subsidiary action of each muscle acting on the eye in the primary position. It should be borne in mind that while the principal action of each muscle is aided by certain other muscles, its subsidiary actions are prevented by certain other muscles. This arrangement permits simpler movements of the eye than could otherwise occur.

Muscle.	Principal Action.	Subsidiary Action. (Not manifested under normal conditions.)
Int. rect.	Adduction	
Ext. rect	Abduction	
Sup. rect	Superduction	Adduction and intorsion. Purely a superductor for eyes abducted 27 degrees.
Inf. rect.	Subduction	Adduction and extorsion. Purely a subductor for an eyeball abducted 27 degrees.
Sup. obl.	Intorsion	Abduction and subduction. Purely a subductor for an eyeball adducted 39 degrees. Purely an intortor for an eye abducted 51 degrees.
Inf. obl.	Extorsion	Abduction and superduction. Purely a superductor for an eye adducted 39 degrees. Purely an extortor for an eye abducted 51 degrees.

So much for the action of these muscles in producing various movements of the eyeball. It is well to observe that some of them aid in the production of several different motions. Thus acting on the eye in its primary position, the superior rectus and inferior rectus assist the interior rectus to adduct, while when the ball is abducted beyond 27 degrees they assist the exterior rectus in further abduction. It is of interest to note the correlated functions of the obliques and the vertical recti. As the eyeball is abducted these muscles almost change functions. From being primarily a superductor the superior rectus becomes for the adducted eye almost wholly devoted to intorsion, the primary function of the superior oblique while it loses its function as superductor, a function assumed in this position by the inferior oblique. Similarly, the inferior rectus assumes the function of extortor to an adducted eye, while the superior oblique subducts it. On the other hand, when the ball is abducted each of these muscles becomes more and more confined to its principal action.

FALSE TORSION.

These facts are so firmly established that they scarcely admit of discussion or argument. In fact, their recital before such a body as this is only permissible to round out the symposium on the ocular muscles. We may now approach what is really the one mooted point in the study of the physiology of the ocular muscles, namely, so-called "false torsion." By false torsion we mean the rotation of the eye on its antero-posterior axis which occurs when the ball is moved obliquely up and out, up and in, down and out, or down and in. Relying on the phenomena of after-images it has been taught that this rotation does occur and that it is due to the torsioning effect produced incidentally by the superior rectus and inferior rectus in connection with superduction and subduction. No one can question the fact that the after-images incline, but it has been pointed out by Savage that this inclination is slight and that it is only manifested when the conditions are such as to do away with the influence of the guiding sensation. When this faculty is allowed to act, as it is under normal conditions, it prevents the torsioning so that our visual judgments may remain true; that is, vertical lines still appear vertical and horizontal lines still appear horizontal. It seems that the condition is much the same as in heterophoria, where the tendency is for the visual axis to be so directed as to produce diplopia, but the desire for single vision is supreme and the muscles are compelled to overcome this tendency. It seems, therefore, that we must agree with Dr. Savage, that this torsioning effect does not occur, but is prevented by the action of the appropriate oblique muscles. As he says, this can be demonstrated on a person with favorably located corneal or conjunctival scars or other marks, and the testing of an astigmatic patient with the eyes turned in an oblique direction will show that no change in the axis of the cylinder is allowed; in other words, that rotation of the vertical corneo-retinal meridian has not occurred. Again, the parallelism between the image of an object and the vertical median plane of the head being necessary to convey to us the impression that the object is vertical, the parallelism between the vertical axis and the median vertical plane of the head must be maintained, or we would lose the ability to properly locate the direction of lines. This we do not do, no matter what may be the position of the eyes. Finally, if the oblique muscles do not perform this function, then we must confess that nature has supplied us with muscles far in excess of the work demanded of them, an error with which we would all be slow to charge her. Referring again to Savage, of what use other than to preserve the erect position of the vertical corneo-retinal meridian could oblique muscles be to a horse?

The movements of the visual axis of a single eye may be tabulated as follows:

1. Rotation around the vertical axis.

(*a*) Abduction, external rectus assisted first by superior and inferior oblique and later by superior and inferior recti.

(*b*) Adduction, internal rectus assisted by superior and inferior recti.

2. Rotation around transverse horizontal axis.

(*a*) Superduction, superior rectus assisted by inferior oblique, which also counteracts the torsion, and by internal and external recti later. The latter counteracts adduction.

(*b*) Subduction, inferior rectus assisted by superior oblique, which counteracts extorsion. Internal and external later. The latter counteracts adduction.

Oblique movements are simply compounds of the above. For instance, in looking upward and outward we may consider this as a movement, first upward and then outward. If this is true, then torsioning does not occur in oblique movements since it does not enter into the elementary movements of which the oblique movements are composed.

It is needless to repeat in detail the muscles concerned in turning the two eyes in a given direction. For instance, in looking to the right (dextroversion) we have but to employ the muscles of the right eye which abduct it (external rectus, inferior and superior oblique, and later, superior and inferior recti), and those of the left eye which adduct it (internal rectus, superior and inferior recti). The muscles not directly concerned in the production of the required motion are occupied in preventing motion in any other direction. Thus, in this motion, the visual axes are kept in the same horizontal plane by the superior and inferior recti, and the vertical axes are kept parallel by the obliques.

The law governing the motion of the eyes is stated as follows by Savage: "The recti muscles must control the visual axes, the superior and inferior recti, keeping them always in the same plane, the internal and external recti making them intersect at the point of fixation. The obliques must keep the vertical axes parallel with each other and with the median vertical plane of the head.

Randolph Building.

DISCUSSION

ON PAPERS OF DRS. COLBURN AND ELLETT.

Dr. G. C. Savage, Nashville, Tenn.—The attention given to the reading of Dr. Ellett's paper shows the deep interest this assembly feels in the study of the physiology of the ocular muscles. He speaks clearly and strongly on some points that need not longer be matters of controversy. I agree with Dr. Ellett in every particular except that of nomenclature, and even on this point we are not widely separated in our views. Of this difference I shall have something to say later. There are some points of vital importance in the study of ocular rotations not included in the paper, probably because of the time limit for its presentation. First of these is the law of corresponding retinal points, which is the supreme law of binocular rotations. Before light has ever entered the eye, in the process of development, the parts of the two retinas that correspond are fixed. It is not any more certain that the maculas are predetermined, according to a law which we may never understand, the law of retinal development, than it is that the vertical and horizontal retinal meridians are also predetermined by the same law. This means, of course, that all other meridians are likewise predetermined in the process of development. If development has been normal, the macula of one eye corresponds perfectly with the macula of the other; the vertical meridian of one eye corresponds, point for point, with the vertical meridian of the other eye; and the horizontal meridian of the one eye harmonizes perfectly, point for point, with the horizontal meridian of the other. Any meridian, in the one eye, bearing a definite relationship to the vertical and horizontal meridians, must correspond, point for point, with that meridian of the fellow eye that is similarly related to its vertical and horizontal meridians.

One of the purposes of the existence of the ocular muscles is to so relate the eyes to the fixed vertical and horizontal planes of the head that our visual judgments may be correct; the other purpose is that the two eyes may have their corresponding parts so related to each other as to give single vision, notwithstanding double images. That both purposes may be accomplished the twelve ocular muscles, attached to perfectly developed eyes, must obey the simple law quoted by Dr. Ellett in closing his paper. If the accomplishment of binocular single vision were the only duty assigned to the ocular muscles, and it is the only duty so far as the recti are concerned, the latter part of the law could be made to read: "The obliques must keep the vertical axes of the eyes parallel with each other." Our visual judgments, however, depend on parallelism of the vertical axes of the eyes with each other and with the median plane of the head, hence the completeness of the law quoted by Dr. Ellett.

There are, then two axes of each eye with which the muscles are concerned, the visual axis and the vertical axis. It is strange, and yet true, that errors in the location of these axes were perpetrated in the remote past and have been perpetuated down to the present. I do not know who it was that constructed the antero-posterior axis—the so-called optic axis of the eye—by beginning at the central point of the cornea, making this the anterior pole, carrying it back through the center of rotation, thence on to the retina to a point between the disc and macula, 5 degrees or more from the latter, and named this point the posterior pole. The equatorial plane, which contains both the vertical and the transverse axes of the eyes, was supposed to be at right angles to the so-called optic axis. Doubtless the same man then constructed the visual axis, starting at the macula, carrying it forward to the outer side of the center of rotation, but through the nodal point, and then making it cut the cornea to the nasal side of the anterior pole. Whoever he was, he was wrong, and authors who have repeated this error are wrong. I would not so speak if I did not believe that I can prove to the satisfaction of every listener that what I am about to say is correct. Do you doubt that the central point of the macula is the posterior pole? Then you must doubt that the retinal meridians all cross each other in the fovea centralis. If the fovea is the posterior pole, then the visual axis as it passes through the center of rotation, to a point in the cornea, usually to the nasal side of its center, must be the antero-posterior axis of the eye, and the anterior pole must be that point of the cornea through which the visual axis passes. The corneoretinal meridians are one and the same. Meridians are great circles that cross each other at two points just 180 degrees apart. If one of these points is the central point of the macula, and no one will controvert this, the other point must be located on the corneal surface by the visual axis, and not by the so-called optic axis. Therefore, the equatorial plane which contains the vertical and transverse axes of the eye must be at right angles to the visual axis, and not at the angle of 85 degrees or less.

Würdemann, by his drawing on the board before you, has located the posterior pole. I have located the anterior pole at the corneal point cut by the visual axis. That this is correct and the retino-corneal meridians are one and the same is shown by Javal's ophthalmometer every day. We make the patient look into the center of the tube, his end of the telescope, therefore his visual axis, passing through a definite point of the cornea, cuts the center of the tubal opening. The meridians we measure are lines passing through the corneal point cut by the visual axis. (This explains the well-known fact that corneal astigmatism according to the rule is greater than the total astigmatism.)

The rotation plane of the individual muscle has been described by Dr. Ellett. The plane of every rotation, whether the rotation be in one of the cardinal directions or in any oblique direction, is the plane that passes through the macula, the center of rotation of the eye, and the first and second points of view; hence the eye in passing from the first to the second point of view causes its visual axis to move in this plane. The axis of every rotation lies in the equatorial plane of the eye. This statement would have been made by Helmholtz but for the fact that his understanding of the location of the equatorial plane, at right angles to the so-called optic axis, was erroneous. The rule he gave us for finding the location of the axis of any rotation is perfect. In substance it is: Construct a plane which shall contain the visual axis in its first and second positions; at right angles to this plane construct two other planes, one containing the visual axis in the first position, and the other, the visual axis in the second position. The first plane may be named *a*, and the other two *b* and *c*. The line of intersection of planes *b* and *c* passes through the center of rotation, at right angles to the visual axis as it moves in plane *a*, and is the axis around which the rotation has occurred. This axis lies in the true equatorial plane, but not in the equatorial plane, as Helmholtz understood it. As to Listing's plane, I will only say that it is as useless as his law of oblique rotations is erroneous.

Every harmonious rotation of the two eyes is effected by one or more of nine conjugate brain centers. Five of these are voluntary centers and, therefore, are located in the cerebral cortex, while four are involuntary, and may or may not be located in the cortex. The five voluntary centers control the recti; the four involuntary centers control the obliques. For convenience it is better to know these centers by numbers, first, second, third, etc. Each of these centers is connected with a pair of muscles, one belonging to each eye. The first conjugate center controls the action of the two superior recti; the second, the action of the two inferior recti. These two centers, acting in perfect harmony on normal muscles, keep the two visual axes in the same plane regardless of the point of view. The third conjugate center is connected with the two interni, and is the convergence center. There may, or may not, be a divergence center, but certainly under a nerve impulse the externi help to regulate the visual axes so that they may intersect at the point of fixation. The fourth conjugate center has control of the right externus and the left internus, and it calls these muscles into action when the point of fixation is cardinally to the right. The fifth conjugate center controls the left externus and the right internus, and calls these muscles into action when the point to be viewed is cardinally to the left. These centers are concerned only with the visual axes. But it is not more necessary that the visual axes be properly controlled in the interest of binocular single vision, than it is that the vertical axes shall always be kept parallel with the median plane of the head and with each other, in the interest of visual judgments as well as in the interest of binocular single vision. That the parallelism may be maintained or, in other words, that there may never be rotation around the visual axis, there are the four conjugate centers for the oblique muscles. Every one of these is connected with two muscles, one belonging to each eye, and they are not under the control of the will.

When the second conjugate center subverts the eyes, the vertical axes would be tilted out but for the sixth conjugate center which sends an impulse to the two superior obliques that they may prevent loss of parallelism between the vertical axes and the median plane.

When the first conjugate center superverts the eyes the vertical axes would be tilted in, except for the seventh conjugate center which sends an impulse to the two inferior obliques. These muscles steadily keep the vertical axes of the eyes parallel with the median plane of the head, as the visual axes are made to move upward.

When the point of view is up and to the right, it is reached by the visual axes through the combined action of the first and fourth innervation centers on their respective muscles; or if the point of view is down and to the left, it must be reached by the visual axes as a result of the influence of the second and fifth conjugate centers over their respective muscles. But the visual axes could not be turned in either of these directions, by the proper recti muscles, without such a torsioning effect on both eyes as to make their vertical axes lean towards the right, however, to the same degree. Although the vertical axes would still be parallel with each other, if the torsioning occurred, they would not be parallel with the median plane of the head. If this torsioning were not prevented everything in the field of vision would be made to incline an equal number of degrees to the left, as shown by the study of after images. In such oblique rotations the eighth conjugate center, acting on the right superior oblique and the left inferior oblique, maintains parallelism between the vertical axes and the median plane.

When the point of view is up and to the left, it must be reached by the visual axes through the influence of the first and fifth conjugate centers on their respective muscles; and if down and to the right the result is accomplished through the second and fourth conjugate centers. To prevent the leaning of both vertical axes towards the left, the ninth conjugate center calls into a steadying action the superior oblique of the left eye and the inferior oblique of the right, that these axes may not lose parallelism with the median plane of the head.

Through the voluntary and reflex centers in the brain, the guiding sensation, resident in the retina, is the master of all the ocular muscles. By it well-adjusted muscles are easily and perfectly controlled, in the interest of binocular single vision and of many visual judgments.

As to the nomenclature: There are two kinds of action for every rectus muscle, one of which is effected by the will while the other is effected reflexly. The former should be called the verting power while the latter should be called duction power. Verting applies to both eyes equally, duction applies to only one eye, but there is no longer any duction power when the vision of one eye has been destroyed.

Dr. George M. Gould, Philadelphia—I have just a single word to interject: I noticed a few years ago and have noticed many facts in proof of it since, that we are right-eyed or left-eyed habitually, just as we are right or left handed. That has some bearing on this matter of the physiology of the ocular muscles, and especially in reference to certain refraction problems.

Dr. Lucien Howe, Buffalo, N. Y.—I do not think such an important subject should be passed by the Section without question. There is so much to be said about it, however, that it can hardly be more than touched on in the limited time. I think we are hardly prepared to be obliged to give up our principles at once. When the angle alpha is zero and when the visual and optical axes correspond, of course, we have this condition, but as for saying that it is the case invariably, that is contradicted by actual demonstration. As to the question of "false torsion," that is a matter of demonstration, too; not only a question of existence, but of degree. We must not be misled in this way. As to saying that this one single muscle controls one single motion, and this other muscle another motion, we can not do that.

Dr. W. R. Parker, Detroit—I would emphasize that in handling the ocular muscles from a practical standpoint, an important thing to remember is that in every movement all the muscles may be involved and it is only by studying each one and noting its action that we can arrive at any definite conclusion as to error and treatment. The part taken by any particular muscle may be active or passive. We can have a horizontal error only when the vertically-acting muscles are normal.

Dr. Francis Valk, New York—I have listened intently to Dr. Ellett's paper and hoped he would give a little more information about the movements of the eye in the orbit. I am inclined to look on the matter from a practical point of view and object to the statement that when we consider movement of the eye we must consider all the muscles. There are two movements of importance: first, the movement of turning the eye up and down and in and out. Here the physiologic act that takes place requires very little force, the weakest muscle will move the eye into any position in the orbit. Then we come to the other movement; the field of duction and nature has taken this into consideration and if you examine physiologically and anatomically you find that nature has placed the muscles so and made them of such a size that they exactly correspond with the field of duction. The internal rectus is largest and its insertion is better; the external rectus comes next, and then the inferior and superior recti. It is this field of duction that is the important point in the movement of the eye and in binocular vision and unless we take that into consideration we cannot study binocular vision.

Dr. Colburn, *in closing*—I shall be greatly obliged to Dr. Howe if he will send me the citations which he mentions. All that I am able to find relate only to the size and shape of the cavity of the orbit. At the Field Museum, department of anthropology, the busts and masks are arranged to show different types of various peoples and afford an excellent opportunity to study the pose of the head. The skulls are well arranged to facilitate the study of the relation of the axes and planes of the orbit to the plane of the face and the carriage of the head. Asymmetrically placed orbits seem to favor the production of heterophoria.

Dr. Ellett, *in closing*—If any one understood me to say that any one motion of the eye is accomplished by a single muscle they misundertood me; nor did I consider abnormal attachments of the muscles, but only average attachments. In regard to Dr. Valk's remarks, it was very difficult to speak of some of the matters because they are such every-day affairs and I did not consider it necessary.

THE ASSOCIATION OF GRAVES' DISEASE WITH GLYCOSURIA AND DIABETES MELLITUS.[*]

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Glycosuria as a concomitant of Graves' disease may occur: 1. As alimentary glycosuria. 2. As spontaneous glycosuria. 3. As diabetic glycosuria.

Actuated by the occurrence of transitory glycosuria, especially of the alimentary type *e saccharo*, in 69 per cent. of his cases of Graves' disease, Chvostek[1] considers glycosuria almost a symptom of the latter affection. A similar frequency of this association was also met with by Kraus and Ludwig,[2] who occasioned glycosuria in 4 out of 6 instances of exophthalmic goiter. In the experience of other clinicians, however, alimentary glycosuria *e saccharo* is by no means so frequent a phenomenon in Graves' disease. Strauss[3] found it in 3 out of 19 cases of the affection; Naunyn[4] could produce it but in one of his numerous cases of Graves' disease at the Strassbourg clinic; among 8 cases of the malady out of a total of 10 which have come under my observation during the last two years, alimentary glycosuria *e saccharo* could be demonstrated in one instance only. The assimilative power for glucose of these eight patients was to be determined by the ingestion into the empty stomach of from 60 to 200 grams of chemically pure glucose. In the one positive instance glycosuria was induced after the introduction of 75 grams of grape-sugar; three hours after its ingestion 220 c.c. urine containing 0.92 per cent. glucose (by fermentation) were voided; 2½ hours later 180 c.c. with 0.57 per cent. glucose (by fermentation), and after another 3 hours 190 c.c. with 0.17 per cent. glucose (by fermentation) were excreted. The urine passed 11 hours after the introduction of grape-sugar did not reduce Fehling's or Almen's solutions. Hence, the ingestion of 75 grams of glucose was followed by the excretion of 3.373 grams of urinary glucose. The proportion of 3.373 grams egested to 75 grams ingested glucose points to the fact that the assimilation limit had been hardly surpassed. Moreover, it was not the severity of Graves' disease which induced the glycosuric phenomenon, for while the characteristic symptoms of the affection in this particular case were gradually subsiding, they continued in almost every one of the remaining seven cases in which glycosuria could not be effected, and this in spite of the fact that every one of the eight individuals was under the same general hygienic and medicinal treatment. This patient, a woman, like the great majority of those afflicted with exophthalmic goiter, was 38 years old and had the disease for about one year when first seen. She remained for months under my observation.

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: *Drs. Frank A. Jones, George Dock and J. M. Anders.*

In my experience diminution of the assimilative power for glucose in Graves' disease is not any more frequent than in a variety of gastrointestinal disturbances. In a series of 42 consecutive cases of gastric hyperacidity, for instance, in which the total acidity amounted from 40 to 92 per cent., I found 5 cases, that is, almost 12 per cent., in which the urine after the ingestion of 100 grams of glucose exhibited marked reducing qualities.

Although Goldschmidt's[5] figures do not concur with those of Chvostek, he found that alimentary glycosuria ensued more frequently in patients affected with morbus gravesii than in healthy individuals. His observations are based on the study of 17 cases of exophthalmic goiter. From 100 to 150 grams of glucose dissolved in 500 c.c. water were given them in the morning. Of 5 patients who had taken 100 grams glucose, but one exhibited glycosuria (2 per cent.) for two hours; of the 12 patients to whom 150 grams glucose were given two excreted glucose by the urine, the one 1.5 per cent., the other 0.3 per cent. He opines that alimentary glycosuria appears as often in traumatic affections of the nervous system as in Graves' disease. In patients afflicted with a traumatic neurosis, Mendel[6] found decreased tolerancy for glucose in 22 per cent., and Strauss (*loc. cit.*) with 100 grams glucose on the empty stomach, in 14 out 39, that is, in 36 per cent. of the cases.

The non-occurrence of alimentary glycosuria *e saccharo* in most cases of exophthalmic goiter does by no means preclude its eventual interrelation with this affection. A number of instances have been related in which spontaneous, transitory glycosuria is said to have appeared in the course of Graves' disease. A study of the records of these cases evinces, however, that these instances of supposed transitory glycosuria, with the exception of some of Chvostek's and Kraus' and Ludwig's cases, were nearly all of diabetic glycosuria.

Among the ten cases of morbus gravesii which came under my observation during the past two years, there was one in which the condition of true spontaneous glycosuria obtained. The patient, a negress, 41 years old, a nurse by occupation, called at my clinic on April 29, 1901. She gave the following history:

She arrived in New York City from Virginia but a few days before. She felt weak for the last three years and noticed that she was growing weaker from day to day. Her trouble began with palpitation of the heart; she suffers from a distressing cough, more so on standing than when being in the recumbent position. Occasionally she experiences attacks of dyspnea. About a year ago she noticed first protrusion of the eyeballs and at about the same time enlargement of the thyroid. She gave no history of excessive thirst or polyuria. An examination revealed the presence of the four phenomena characteristic of Graves' disease—tachycardia, thyroid enlargement, exophthalmos and involuntary muscular tremors. Besides these, she exhibited symptoms of lung disease which after examination of the sputum proved to be tubercular.

The urine voided at the clinic possessed a specific gravity of 1023; contained 1.8 per cent. of carbamid, some acid albumin and glucose (Fehling, Nylander, Penzoldt-Rubner). The urine passed six hours later contained 0.8 per cent. of glucose (fermentation). All the urine voided thereafter and subjected to analysis did not contain any glucose although the patient continued on a diet relatively rich in carbohydrates. The specific gravity of the blood at the first examination amounted to 1052, and a week later to 1048.5. At no time did it exhibit the tinctorial phenomenon of Bremer. The malady came to a fatal issue in the latter part of May, 1901.

This case was undoubtedly one in which the glycosuria was of the spontaneous, transitory type. The nonrecurrence of urinary glucose after an unaltered, starchy and sugar-containing diet, excludes the supposition of alimentary as well as of diabetic glycosuria. The patient perished of the original disease, by heart paralysis; the tubercular process was not far enough progressed to have been more than a contributory toward the rapid dissolution; diabetic phenomena, however, had not at all ensued at any time while she was under my observation.

The association of Graves' disease with diabetes mellitus seems to occur somewhat more frequently than that with spontaneous glycosuria. The coincidence of these conditions may be threefold, that is, exophthalmic goiter may arise during the course of diabetes mellitus, or it may be contemporaneously produced with it, or the appearance of the diabetic phenomena may be subsequent to that of Graves' disease.

A case in which diabetes mellitus existed before the advent of Graves' disease was reported by Hartmann.[7] An unmarried woman, 32 years old, was affected with simple goiter for 13 years when diabetes ensued. After this had continued for one year, the struma became enlarged, and after another year the symptom-complex of morbus gravesii was fully established. A case belonging into this category was described by Schmidt,[8] in which a laborer, 37 years old, who had been subjected to diabetes for some time, developed all the symptoms of morbus gravesii with the exception of the goiter. Grube's[9] patient, a female, aged 50 years, on being informed that she excreted 9 per cent. of glucose by the urine, experienced an extreme shock which she considers the causative factor of the now appearing syndrome of Graves' disease.

Cases in which Graves' disease appeared simultaneously with diabetes mellitus were related by Dumontpallier,[10] O'Neill,[11] Bettmann,[12] Grawitz,[13] and Osterwald.[14] O'Neill's patient was a woman, 42 years of age, in whom both affections occurred in very pronounced form. The case terminated lethally. Bettmann's case, which with some justification may be enumerated among the following subdivision, because thyroid enlargement and exophthalmos were present for some years when diabetes supervened, was observed by him at Erb's clinic in Heidelberg. However, as the heart symptoms completing the clinical picture of morbus gravesii ensued synchronously with the diabetic phenomena, the instance in all probability belongs to this group. It was a woman, 54 years old, who excreted glucose to the amount of 4.5 per cent. That both affections were interdependent was evidenced by their further course. Grawitz's observation was made in a neuropathic female servant, 22 years of age. The conditions, both of which were well pronounced, started simultaneously. At the height of the glycosuria 162 grams of glucose were excreted in 24 hours. Osterwald's case was under observation at Ebstein's clinic in Göttingen. The patient, a girl, 18 years of age, who was never ill before, had menstruated only once when she was admitted to the hospital. Both affections had ensued at the same time. Under an antidiabetic regimen the patient improved somewhat, although acetone and diacetic acid were persistently exhibited in the urine. As much as 444 grams of glucose were discharged by the urine in one day.

Instances of the association of both morbid states in which diabetes did not occur until Graves' disease was fully established, or had pre-existed for some time, were reported by Wilks,[15] Lauder Brunton,[16] Hartmann (loc. cit.), Fischer,[17] Barnes,[18] Budde,[19] Cohen,[20] Kleinwaechter,[21] Mannheim,[22] Hannemann,[23] Revilliod,[24] Lannois[25] and Osterwald (loc. cit.).

Wilks' observation was made in a woman 44 years old. Urinary glucose fluctuated between 1 and 3 per cent. Antidiabetic diet did not materially influence the excretion. The appearance of diabetes was followed by decrease of the goiter. Lauder Brunton's patient was a female domestic, aged 43. A traumatic condition probably stood at the foundation of the exophthalmic goiter and the subsequent diabetes. The patient soon perished. Hartmann's second case occurred in a female, who developed Graves' disease when 21 years old. Diabetes ensued ten years afterward, during a period of gestation. Glucose was discharged in amounts of from 3 to 6 per cent.; also after parturition. This case also died.

The case related by Fischer occurred in a woman aged 40 years, and that reported by Barnes in a woman 34 years old. In this case, which came to a fatal issue, diabetes first appeared 2½ years before she came under observation. This was 2½ years after the onset of Graves' disease. Budde encountered two instances of the combination. The first was that of a woman in her 54th year of life, in whom diabetes evolved two years after completion of the syndrome of morbus gravesii, and in whom death supervened in coma; the other case was that of a girl, 24 years old, who excreted but small amounts of sugar, which disappeared on the institution of an antidiabetic regimen. Cohen's case, a female patient, 42 years old, had also symptoms of tabes dorsalis. She excreted 2.9 per cent. of glucose. This case is very likely identical with that described by Mannheim a year later. Both authors worked under Mendel. However, the tabic symptoms had disappeared before Mannheim had seen the case.

Kleinwaechter investigated a case of Graves' disease of four years' duration in a woman 23 years old. He found atrophy of the mammæ and of the right ovary. The urine contained 1 per cent. of glucose. The glycosuria was diabetic. Hannemann reported a case of a woman, aged 31 years. Nine years previously she had developed Graves' disease, which progressed but little during this period. Diabetes supervened abruptly. Glucose occurred to the amount of 1.8 per cent. Two weeks after the onset of the diabetic phenomena death ensued in coma. Revilliod's observation was made in a woman 59 years old. Besides the two affections, he found also hyperemia of liver and spleen. Glycosuria concurred with albuminuria and phosphaturia.

Lannois described two instances, both of which occurred in females and terminated fatally. One patient was 36 years old; she died in coma. The other, who was in her 53d year, had a small goiter since childhood; this became enlarged ten years ago. For the last six years exophthalmos was present. Two years afterwards, when Graves' disease was fully established, the urine exhibited albumin, acetone and about 3 per cent. of glucose.

The history of Osterwald's second case is of interest as morbus gravesii, which had prevailed and subsided, again appeared after twenty years on the occasion of some lung affection. The patient, a woman of 40 years, soon after the last occurrence of Graves' disease developed diabetes. She voided as much as 4 liters of urine, containing 7 per cent. of glucose per diem. An improvement of the diabetic symptoms was noted on an antidiabetic regimen.

The last of the ten cases of morbus gravesii which came under my observation was associated with true diabetes, which arose secondary to the former condition. It occurred in the practice of Dr. E. J. Palmer of New York City, with whom I have seen the case in consultation on different occasions. As far as I am aware, it is the only case of its kind which has been observed in this country:

Mrs. C. L., whose family and previous personal history is negative, in 1898, when 54 years old, experienced a severe shock which was soon followed by morbus gravesii. Heart symptoms, exophthalmos, thyroid enlargement and especially the nervous phenomena were very pronounced. Graefe's sign was present, and ulcerative keratitis prevailed for some time. The patient, whose weight had always been in the neighborhood of 78 kilograms, became rapidly emaciated. Muscular weakness was extreme. Traces of albumin were detected in the urine. Under prolonged thyroid medication the patient recovered almost entirely. She regained almost all of her lost weight, became stronger; exophthalmos and thyroid enlargement disappeared. Excepting some tachycardia the heart symptoms had also subsided. Early in October, 1901, there was a recurrence of the exophthalmic goiter. *Combined with it*, there appeared symptoms of diabetes, as polydipsia, polyphagia, polyuria and glycosuria.

I first saw the patient on Dec. 23, 1901. I found her greatly agitated and restless and in a state of slight mental disturbance. She had lost about twenty kilograms in body weight since October. She has had numerous attacks of vomiting during the last few weeks, and is generally constipated. She complains of intense dryness in the throat and of flatulence.

Examination.—The general appearance indicated a far-advanced cachexy; pallor eximius was very pronounced; *she could* not stand without assistance; extremities were very lean; muscles and abdomen soft and flaccid; patellar-reflex and ankle-clonus were diminished. The temperature amounted to 37.2 degrees C. by the rectum.

Cardiac and Vascular Systems.—Visible cardiac pulsation in fourth interspace. Increased area of cardiac dulness extending transversely for fourteen centimeters and pointing to a hypertrophic condition. The frequency of the heart's action amounted to 118 beats per minute; *the heart impulse* was decidedly increased. There were distinct systolic murmurs at the base and apex of the heart. Similar murmurs were heard in the carotids and in other great blood vessels. *The arterial pressure* sphygmomanometrically ascertained amounted in the left radial artery to 160, and in the right radial artery to 135 milligrams of mercury.

Thyroid Gland.—The enlarged thyroid body measured transversely about nine centimeters. Both lobes of the thyroid participated in the enlargement; the right one, however, more so than the other. Their arterial pulsation was plainly visible and also noticeable on palpation. The gland felt hard.

Eyes.—Exophthalmos was very pronounced. The left eyeball protruded somewhat more than the right. There was slight bilateral ulceration of the cornea. The signs of Graefe and Moebius were present.

Other Organs.—The lungs did not exhibit any symptoms of organic disease. The stomach was slightly dilated; pressure on the pyloric region occasioned pain. The liver, palpable below the arch of the ribs, was hyperemic and tender; the spleen was slightly enlarged. The other abdominal viscera seemed normal.

Urinalysis.—The results of my first urinary examination, as well as all those derived at by subsequent analyses, are incorporated in the following table. Glucose was searched for by Nylander's method; its quantity was determined by Fehling's test, or by fermentation in my urino-glucosometer.

Date.	Quantity of Urine for 24 Hours; c.c.	Specific Gravity at 15.5° C. 1000+	Acidity; degrees.	Total Solids; grams.	Carbamid.		Glucose.		Acetone.*	Diacetic Acid.*	Indoxyl Potassium Sulphate.*
					Per cent.	Grams.	Per cent.	Grams.			
Dec. 24.	5600	13.5	0 17	176 18	1 4	78 4	0.46	25.76	+++	++	++
" 25.	5100	16	0 2	290.13	1 7	86 7	0 69	35.19	+++	++	++
" 26.	5250	15.	0.18	183.49	1.3	68.25	1 15	60.38	+++	++	+
" 27.	7500	12.	0.09	209 7	1.1	82.5	0.9	67.5	+++	++	+
" 28.	6250	10.	0 14	145.63	0.9	56 25	0 75	46 88	+++	+	N.
" 29.	5000	8 25	0 22	96.1	1.05	52.5	0 23	11 5	++	+	N.
" 30.	3250	10.5	0 29	79 53	1.4	45 5	0.15	4 88	++	+	N.
" 31.	3180	11.	0 32	81.5	1 25	39 75	0.2	6 36	++	++	N.
Jan. 1.	3350	9 75	0 26	76 1	1	33.5	0 34	11.39	+	+	N.
" 2.	3200	11.	0 31	82	1 15	36 8	0 4	12 8	+	+	N.
" 3.	3600	12.5	0 28	104 89	1 3	46 8	0.69	24.84	++	++	N.
" 10.	3470	12.	0.29	97.	1.2	41 64	0.55	19 09	++	+	+
" 26.	4100	11 5	0 25	109 88	1.3	53.3	0 52	21 23	++	++	+
Feb. 19.	4500	13 25	0 22	138 92	1.45	65 25	0 8	36	++	++	+
" 20.	4200	11.75	0 21	115	1 2	50 4	0 63	26 46	++	++	+
" 21.	4050	12.	0.24	113.24	1 05	42 53	0 75	30.38	++	++	+

* N. = normal; + = increase; ++ = great increase; +++ = very great increase.

The diet was mixed regimen. proteids predominating, milk.

The medication was: Sodium bicarbonate, 20 to 30 grams per diem. After five or six days' employment, this was discontinued by the patient. Also four tablets every day of the following: Thyroid powder, 0.12; acid arsen., 0.001; adonidin, 0 005.

An examination on February 19 evinced the progressive weakness and emaciation of the patient, whose body weight in the meantime had declined to about 40 kilograms.

Blood Examination.—An examination of the blood made by me on February 19 showed the following:

BLOOD EXAMINATION.

ALCALESCENCE: =266 5 milligram NaHO in 100 c.c. blood.
SPECIFIC GRAVITY: 1039 5.
HEMOGLOBIN: 44 per cent.
BLOOD COUNT { Erythrocytes = 2,240,000 in 1 c.mm. blood.
Leucocytes = 18,000 in 1 c.mm. blood.
Proportion, erythrocytes to leucocytes = 124 : 1.
EXAMINATION OF COVER-GLASS PREPARATIONS:
Bremer's reaction; negative.
Hyperleucocytosis of lymphatic, [illegible]
Distinguished; normal erythrocyt
(large amount), large lymphocy
amount), eosinophiles.

The patient grew weaker from day to day. She experienced no pain. Jactitation became gradually diminished. On February 27 she expired from exhaustion.

This case resembles somewhat the second one observed by Osterwald, inasmuch as the cardinal symptoms of Graves' disease had more or less vanished, and that diabetes supervened only when a recurrence of the original affection ensued. The comparatively rapid subsidence of the first condition of hyperthyroidism seems to have been due, in a measure at least, to thyroid medication. In the second attack, when diabetes occurred as a complication, thyroid therapy remained without apparent influence on the prevailing conditions. The clinical pictures of morbus gravesii, as well as of the diabetic state, were perfect already when I first saw the case. There were some days, to be sure, on which the patient felt decidely stronger. Both affections, however, remained almost stationary while the patient, gradually but inevitably, wasted away.

The dietary regimen to be pursued in the treatment of the associated conditions leaves one in a great dilemma. A rigid proteid-fat alimentation as is imperative, for some time at least, for the rational treatment of diabetes mellitus, was not well borne in most all of my cases of exophthalmic goiter. While, theoretically, the body-albumin saving proteid-fat diet appears to be the indicated regimen in hyperthyroidism, it does not, as a matter of fact, prevent albumin disintegration to any extent in that affection. At least, this is my experience. The best results are here obtained by the institution of a mixed diet. As the glycosuria was one of a lesser degree, a strict antidiabetic regimen was not insisted on in this instance. Milk, of which from 750 to 1500 c.c. were ingested during the 24 hours, constituted the bulk of the nourishment. It is probably due to this fact that the glycosuria never ceased entirely.

The administration of 0.48 gram of powdered thyroid gland per diem modified by arsenious acid, was rapidly followed by an increase of urinary glucose from 25.76 grams on December 24, to 35.19, 60.38, 67.5 and 46.88 grams, respectively, on the four succeeding days. On December 29 the amount of excreted glucose declined abruptly to 11.5 grams. The lowest diurnal quantity which the patient discharged was 4.88 grams. This occurred on the following day. On December 31 the glucose output increased to 6.23 grams, January 1 to 11.39 grams, on the next day to 12.8 grams; January 3 it had reached 24.84 grams. A week later the glycosuria was somewhat less intense; February 19 the glucose elimination had again been augmented to 36 grams. From December 29 to January 2, the period of diminished glucose excretion, the patient felt particularly bright and cheerful, although there was no decided improvement in her strength. Polydipsia was less pronounced during these days, which was enunciated by the diminished secretion of urine. Inasmuch as the diet had not been materially altered during these five days, the lesser degree of glycosuria and the concurring diminution of the diabetic and nervous phenomena might be ascribed to the thyroid-arsenic medication. The change for the worse, taking place subsequently when the patient was under the same medication and substantially the same regimen, was in reality nothing else than the direct continuation of the glycosuria as it existed prior to December 25, that is, prior to the thyroid-arsenic influence. The dose of the powdered thyroid, it is true, was rather small; due consideration, of course, had to be taken of the general condition, and especially of the heart. For this purpose adonidin to the amount of 5 milligrams was added to each tablet. The powdered thyroid at first stimulated and increased the thyroid activity in the organism; besides the greatly increased output of glucose, this is shown by the rather augmented quantities of carbamid. After a few days only the perverted action of the thyroid gland was subdued to the extent that carbamid was eliminated in about half the amounts as before and that the sugar output decreased materially.

The subsequent return to the condition prevailing before the institution of thyroid medication was probably due to the ineffectiveness of the drug to hold in check the perverted functional activity of the thyroid gland. Acetone and diacetic acid were found in every specimen of urine examined. The first was tested for by sodium nitroprussiate and NaHO solution and the

I, KI, KHO method was applied as a control test. Diacetic acid was examined for by Gerhardt's reaction. The period of diminished glycosuria was also that of reduced acetonuria and diaceturia. Albumin, which is said to have occurred on the first occasion of Graves' disease, could not be detected in the urines of the later attack.

A perusal of the various instances of spontaneous and diabetic glycosuria in association with hyperthyroidism as recorded in the foregoing evinces the following facts:

A. The greater frequency of the associated conditions in the female sex.—Of the 24 specified instances of the combination of Graves' disease and glycosuria, two occurred in males and 22 in females. That is in the proportion of 1 in the male to 11 in the female. While hyperthyroidism occurs in the female sex in the proportion of 4 to 1 as compared with males, this proportion is tripled if it occurs in association with the glycosuric phenomenon.

B. The age at which the association ensued.—The age at which the patients came under observation was not always the one at which the association occurred. In some instances, I dare say, the observers themselves could not fix a definite period at which it had taken place. The youngest patient was 18, the oldest 59 years old. The average age at which the combination ensued must have been in the 39th year of life. From 12 to 14 of the 22 cases in females occurred at or near the period of cessation of menstrual life.

C. Prognosis and termination.—Complete subsidence of all the symptoms of the associated affections did not occur in a single instance. A partial improvement, at least for the time being, took place in one or two cases. A number of the cited instances were recorded soon after the association had supervened. If these reports would have been made at some later period and not so soon after the association was detected, they would be of greater value to us in determining the final termination. Of the 24 cases 10 are reported to have perished while still under observation. Definite statements as to the period which had elapsed between the outset of the complication and the lethal termination seem to have been made in six instances only. Thus, Budde records one year, Barnes two and a half years, Hannemann two weeks, Lannois four years, and in my cases the patients lived for four weeks and for five months respectively.

I can not concur with observers like O'Neill (loc. cit.), Von Noorden,[26] Leo,[27] Hirschfeld,[28] and two or three others, according to whom the association of Graves' disease and glycosuria or diabetes is merely an accident, not denoting an interrelation between the two conditions.

The infrequency of the concurrence of the two affections justifies this assumption to a certain degree. Leaving out of consideration alimentary glycosuria *e saccharo,* which may be induced just as often during the prevalence of certain neuroses and alimentary disturbances as in the presence of Graves' disease, ignoring also the exceedingly rare combination of the latter affection with spontaneous glycosuria, disregarding even the instances in which diabetes appeared before exophthalmic goiter had ensued, there are some well-authenticated cases on record in which both conditions were produced synchronously, that is, in which the appearance of one pathologic state was dependent on that of the other, or in which they were both dependent on the presence of one common morbific factor; and there are also those instances in which Graves' disease occurred first and diabetes afterward, and in which decline or exacerbation of the one condition was reflected on the other. Furthermore, the production or intensification of glycosuria, occasionally following the administration of thyroid extract or iodothyrin, tends to evince the interrelationship of the coexisting affections.

Again, if we agree with Strauss (loc. cit.) that thyroid preparations produced glycosuria in such individuals only who were predisposed to it (my own experience confirms this assumption to some degree), it does not exclude the interdependence of the two concurring affections. It gives even further support to the view, that hyperthyroidism, under certain conditions, is productive of grave disturbances in the metabolism of the carbohydrates, or that perverted thyroidism may be the instigator of the association.

The administration of thyroid preparations may induce a functional or systemic anomaly analogous to that prevailing in hyperthyroidism; alimentary glycosuria *e saccharo* in Graves' disease may thus be dependent on the same causative factors as when it supervenes on the ingestion of thyroid substance. Like in morbus gravesii, alimentary glycosuria *e saccharo* is induced in a certain proportion only of the cases under thyroid medication. There are instances on record in which glycosuria did not ensue even after the ingestion of very large doses of the preparations of thyroid.

Alimentary glycosuria after thyroid medication, however, may not only occur in those with latent diabetes, but also in more or less normal individuals. Bettmann[29] had given thyroidin or iodothyrin for a week to 25 healthy persons. The quantity was moderate and with the last dose he administered 100 grams glucose. He induced glycosuria in 12 individuals, that is, in 48 per cent. of those who were subjected to the test. Concurring with glycosuria he found an increase in the amount of urine. In all instances the glycosuria had subsided in a week's time.

Strauss (loc. cit.) observed two cases of diabetes in which the tolerance for carbohydrates became diminished after the use of thyroid preparations, and Grawitz (loc. cit.) found in his case of Graves' disease complicated with diabetes, that the glycosuria became more intense for two weeks, even after the medication—iodothyrin—had been discontinued, which fact points to a cumulative or long-continued action of the agent.

It would lead me too far were I now to relate all pertaining instances recorded in literature during the last five or six years; the evident interrelation of thyroid medication and sugar excretion in certain cases, and its analogy to alimentary glycosuria in Graves' disease, evinces that the eventual association of the two latter conditions is not one of accident, but one of necessity.

I shall refrain from detailing the various contentions as to the common etiology of morbus gravesii and diabetes mellitus. Suffice it to state, that both affections were classified among the neuroses without definite anatomical substrata; that they were considered sequelæ of some affection of the sympathetic nervous system, or that both were dependent on lesions in the medulla oblongata, or finally, that Graves' disease as well as the diabetic phenomena resulted from a perverted action of the thyroid gland.

In delineating the connecting points between hyperthyroidism and diabetes mellitus, but two eventualities should be taken into account, namely, the synchronous production of both conditions and that association in which diabetes is attendant on completely developed Graves' disease. The complication in which exophthalmic goiter appears subsequent to diabetes mellitus seems to be devoid of any interdependence. In the first instance, all pertaining cases which I found recorded should not unreservedly be accepted as belonging in a class by themselves. In the one case of Hartmann, goiter without the other symptoms of Graves' disease existed 13 years before diabetes supervened. It is true, the clinical picture of [illegible] was completed only a year afterward; [illegible] possible that the goiter was symptomatic of incipient or latent morbus gravesii. Just the reverse occurred in Schmidt's case, in which the goiter did not appear at all. In the instance related by Grube it is not at all impossible that the exophthalmic goiter pre-existed in a latent form. Furthermore, the production of Graves' disease during a chronic disturbance like diabetes might occur just as any other concomitant affection may arise, i. e., independently of the first existing disturbance.

The loose connection of Graves' disease with antedating diabetes manifests itself by the unchanged character of the latter after supervention of the former. The three last-named observers do not speak of any aggravation of the diabetic phenomena; there was, apparently, no change for the worse after the association of the two conditions.

Those instances, however, in which both conditions arise contemporaneously, or in which diabetes is preceded by fully-developed morbus gravesii, are in almost every case very grave disturbances from the onset, or the entrance of diabetes is indicative of an aggravation of the symptoms of Graves' disease. While in the last two eventualities the association, manifestly, is one with a common etiologic basis. the combination in which diabetes is the original and morbus gravesii the subsequent affection, ensues without their apparent interrelation.

There seems to be little doubt that Graves' disease is due to the perverted action of the thyroid, or the parathyroids, or of both. If the same abnormal thyroid or parathyroid activity stands also at the foundation of the concurring diabetes, then we must assume with Bettmann (loc. cit.) that the thyroid intoxication exerts a secondary influence on the most potent organs of metabolism. However, if such is the case, why is the association of both affections so infrequent? If superactivity of the glands is the supposed cause of the association, then the complicating diabetes is virtually what I have designated a diabetic deterioration,[30] that is, the glucose and the increased nitrogen output are due to augmented disintegration of body albumin. Yet, why should the association be so infrequent when superactivity of the glands seems to be the causative factor of Graves' disease? The diabetic phenomena can not be due to diminished thyroid or parathyroid activity, because, firstly, the condition underlying Graves' disease is mostly likely one of increased glandular activity, and, secondly, extirpation even of the thyroid gland is not followed by diabetes, as Minkowski[31] has pointed out. The glycosuria observed by Falkenberg[32] after removal of the thyroid body, contrary to his own contention, was nondiabetic, and was presumably caused by interference with the systemic equilibrium, and not by the loss of thyroid activity, *per se*. Besides, as far as I am aware, these observations remain as yet uncorroborated.

Thus it appears that hyper- as well as hypo-activity of the glands are, as such, without influence on the sugar excretion. The association of hyper- or dys-thyroidism with diabetes is explainable only by the perverted action of a fermentative substance usually generated in minute quantities by the thyroid or the parathyroids. Pathologic action of the glands need not necessarily comprise perverted activity of the special ferment. In other words, there may be perverted, or toxic thyroidism, or parathyroidism, as in mobus gravesii, and no disturbance or alteration of the specific fermentative activity. Hence, the relative frequency of Graves' disease and the extreme rareness of its association with a synchronously arising or an attendant diabetes.

We have thus far not succeeded in isolating any physiologically active thyroid or parathyroid ferment; the specific hypothetic ferment substance in question exerts probably a plasmolytic function. In normal amount and activity it may be essential to physiologic catabolism; occurring in excessive quantities, or exhibiting augmented potency it may be productive of diabetic deterioration. As the thyroid and the parathyroids do not seem to play an immediate rôle in the metabolism of carbohydrates, it is not very likely that the ferment in question is endowed with glycolytic properties. If it were we would have to assume the occurrence of a specific afermentemia or dysfermentemia which would give rise to hyperglycemia and all the phenomena denoting a diabetic state.

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DISCUSSION.

Dr. A. A. Jones, Buffalo—I have observed a case recently which bears on the discussion. For a number of years an obese man of middle age was in my care and he always presented the ordinary symptoms complex of lithemia, with hyperacidity of the urine, of high specific gravity, with a large sediment of uric acid. His pulse was of low pressure, small and weak. Except for pain in his back at times and a feeling of weariness, he appeared to be in good health otherwise. On account of his obesity I gave him extract of thyroid in ten-grain doses a day. Before administering the thyroid extract his urine was repeatedly examined for sugar and none found. Since giving the extract the urine was found to be loaded with sugar except when he was on an absolute diet; the slightest departure from the absolute diet caused sugar in the urine, sometimes amounting to as much as from thirty-six to forty-seven grams in the twenty-four hours. When the thyroid extract was stopped the sugar disappeared from his urine. I do not offer this as an argument that glycosuria in exophthalmic goiter is due to any enlargement of the thyroid gland.

Dr. Stern, in closing—Starr has made observations on this matter and came to the conclusion that thyroid medication does not produce glycosuria unless there is some predisposition. As to the coincidence of diabetes and Graves' disease, I concur with that, if diabetes occur at first and Graves' disease afterward; if they occur simultaneously then it is different altogether. Regarding the frequency, there are only twenty-four cases on record, two having occurred under my own observation. I have hunted through the literature of all languages and those were all that could be found.

ENDOCARDITIS AS A COMPLICATION OF PNEUMONIA.[*]

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Ever since the days of the second edition of Bouilland's clinical treatise on diseases of the heart, pneumonia has been recognized as one of the causes of endocarditis. Endocarditis in pneumonia, however, is of infrequent occurrence, as may be inferred from the following statistics:

Thus Aufrecht, in 1,501 cases of pneumonia, observed recent endocarditis only once. Fismer encountered it in 2 of 180 cases; Herman once in 44 cases; Huss 4 times in 2,710 cases; Waller once in 81 cases. It was recognized twice in 498 cases which I analyzed ten years ago, and I have since seen a few other examples. Pye-Smith met with (ulcerative) endocarditis 7 times in 425 cases of pneumonia. Sears and Larrabee found, at autopsy, 9 cases of endocarditis in 341 fatal cases in an analysis of 949 cases of pneumonia. Osler found endocarditis in 16 of 100 fatal cases of pneumonia which he analyzed.

Cases without reference to statistics have been reported by many writers. It follows from the statistics above quoted that endocarditis was known to be present in 19 of 6,050 cases of pneumonia, equal to 0.3 per cent., and in 47 of 1,213 fatal cases, equal to 4 per cent. However, I am of the opinion that this is an underestimate of the truth for very obvious reasons. On the other hand, if we analyze the cases of acute endocarditis we find that pneumonia figures quite largely as a causative agent:

Thus, pneumonia appeared to stand in an etiologic relation to the endocarditis in 1 of Abraham's 9 cases; in 8 of Banti's 22 cases; in 1 of Bullock's 13 cases; in 14 of Desse's 34 cases; in 9 of Harbitz's 43 cases; in 1 of Truax's 6 cases; in 14 of Kanthack and Tickell's 84 cases; in 5 of Lenhartz's 38 cases; in 54 of Osler's 209 ulcerative cases; in 1 of Jackson's 5 cases; in 1 of Walter's 21 cases, and in 6 of Weichselbaum's 33 cases.

Thus, of these 517 fatal cases 115 were in connection with pneumonia, a percentage of 22.3.

The endocarditis of pneumonia is usually on the left side, rarely on the right. This statement, which is based on a survey of a large number of reported cases, is important because it has been stated by eminent authorities that pneumococcal endocarditis attacks by preference the right side of the heart, and the error has found currency in the literature.

The mitral valve is oftenest affected, but the aortic is probably more frequently involved than in any other form of endocarditis. For example, in 40 fatal cases which I have analyzed as to this point the mitral was alone involved in 14; the aortic alone in 10; the mitral and aortic in 7; the aortic and tricuspid in 2; the tricuspid alone in 2; the pulmonary alone in 2; the left valves in 1; indefinite in 2.

The action may rarely extend from the valvular cusps to the ventricular or auricular walls, the chordæ tendinæ, etc. Thus Andrew reports a case in which there were ulcerative vegetative growths on the aortic and mitral valves and all over the interior of the left ventricle.

Of the distinguishing features of pneumococcal endocarditis may be mentioned the massive character and broad base of the vegetations and their tendency to ulcerate. Thus, in McWeeney's case, there was a mass of vegetations the size of a cherry on the right aortic cusp, behind which the leaflet was ulcerated and perforated. In Osler's 16 cases of endocarditis, encountered in 100 fatal cases of pneumonia, 5 were verrucous and 11 ulcerative. Pye-Smith met with 7 cases of ulcerative endocarditis in 425 cases of pneumonia.

Pneumococci, first found in the lesions of endocarditis in pneumonia by Meyer in 1887, may usually be found if carefully looked for. Early they may be living and active, but they soon lose their vitality and die. Under these circumstances the softened débris from such endocardial vegetations are sterile.

Endocarditis in pneumonia develops comparatively early. Thus, in James and Porrith's case, with death on the seventh day, ulcerative endocarditis was present. In Bachfeld's case, with death on the ninth day, there was already an ulcerative endocarditis of the mitral valve.

The symptomatology of pneumonic endocarditis, previous to ulceration and embolic showerings, is enveloped in considerable obscurity. That the valves may be loaded down with large vegetative masses without giving rise to any distinguishing symptoms and signs seems scarcely credible, yet the fact remains that this is of frequent, if not of usual, occurrence. Not only is this true of the verrucose variety, but it applies to many cases in which ulceration has taken place.

Thus, in Pollock's case, with vegetations and a mass of coagulated fibrin on the ventricular surface of the anterior cusp of the aortic valve, an inch in length and five-eighths of an inch in breadth, with an ulcer with thickened edges on the other leaflet, the aortic sounds remain normal. In a case reported by such an expert as Gibson an acute ulcerative endocarditis of the aortic valves ran its course unrecognized during life. Again, such an experienced and acute observer as Sturges reports a case in which the cardiac sounds were carefully observed during three weeks; nevertheless, the autopsy disclosed large vegetations on the perforative ulcerations of the aortic leaflets. One cusp was divided by the ulcerative process as far as its base, while from the second a mass of old fibrinous clot, about an inch in length, depended by a thin pedicle. This cusp also had a small perforation near its center. On the remaining cusp was a vegetation the size of a pea. The reporter specifically remarks that, "it may be stated positively, therefore, that the cardiac sounds were clear and without murmur." In the case which I was about to report the heart sounds, examined many times by Babcock and more than once daily by myself, remained clear and distinct until after the embolic showering, which occurred at the end of a month.

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If symptoms and signs should be present and detected at a period anterior to the occurrence of embolism they will be those which are common to all forms of endocarditis. Of these a change in the character of the pulse, especially as estimated by the sphygmograph, an alteration in the quality of the heart's sounds and the appearance of cardiac murmurs are the most important. Should ulceration occur these phenomena are more likely to appear, or if present, they are accentuated, and others are added, the most striking and significant of which is embolism.

Ulceration occurs in a large proportion of cases of pneumonic endocarditis. It may occur early, or it may be delayed for many days, or even several weeks. A not uncommon sequence of events is for the pneumonia to run its course to crisis, with nothing unusual to direct attention to the heart, when, after a few days of apparent convalescence, signs of embolism with fever supervene. Or disintegration of the endocardial vegetations may occur, with evidences of general septicemia, before the pneumonic process has run its course, with practically certain death in a few days. Or, again, the period of apparent convalescence may be greatly prolonged, as occurred in my own case, with at least some prospect of recovery.

Some of the notable symptoms of ulcerative endocarditis are: cardiac irregularity and fluttering with murmur; gastrointestinal disturbances with possibly blood in stools; hematuria; pain in the region of the spleen, in the kidneys, in the parotids and about the joints; disturbances of visions; fever; emaciation; cutaneous petechiæ, etc.

Purulent meningitis is a very frequent concomitant with pneumonic endocarditis. Thus, in 54 fatal cases of pneumonic ulcerative endocarditis, Osler found meningitis in 15. They coexisted in 3 of the 7 cases analyzed by Sears and Larrabee.

The duration in fatal cases is usually a few days or weeks, but in those cases which end in recovery the course is, necessarily, a prolonged one.

A fatal termination is the result in an overwhelming majority of cases, yet the occurrence of such cases as the one reported in this paper and of a very few others, rare as they may be. shows that the condition is one which is not necessarily fatal.

It is my opinion that those cases in which softening and ulceration does not take place for a considerable time after the vegetations have formed offer some, although small, hopes for recovery. Under these circumstances the ulcerative débris is usually not infective and if the emboli are minute the showerings may be nonlethal.

In the matter of treatment I wish to emphasize the importance of those measures which have for their object the lessening and prevention of sudden and severe cardiovalvular strain. In my opinion the patient should, when during or subsequent to an attack of pneumonia, a diagnosis of endocarditis can be positively or probably made, be confined, absolutely, to the recumbent position and all voluntary, and especially straining, movements avoided. He should not be allowed to turn in bed by his own exertions, much less be allowed to assume the erect position, and these precautions should be continued for several weeks, e. g., six or more weeks after the last embolic manifestations. Coughing, sneezing, etc., should be avoided. The other advisable features of treatment should follow ordinary lines.

The following case of pneumonic endocarditis, with ulceration and recovery, is given in rather free detail for the reason that in it the symptomatology and diagnosis were clear-cut and positive and the result eminently satisfactory. In all of its important features I have thus far been unable to find its counterpart in the literature on this subject.

Summary.—Pneumonia, with hepatization gradually extending and involving almost the whole of the lungs; profound symptomology and prolonged course; ulcerative endocarditis and very extensive embolic showerings; recovery with but little apparent injury of the heart.

Narration.—A gentleman, 68 years of age, of previous general good health, was taken, at 11 a. m., May 6, 1900, with a slight chill, followed by headache, general aching pains, fever, cough, slight pain in the right side of the chest and other of the ordinary symptoms of beginning pneumonia. When first seen at 2 o'clock there was no difficulty in arriving at a diagnosis, although auscultatory signs could not be detected.

The symptoms were of moderate degree of severity during the first 24 hours, after which they rapidly increased in intensity until the end of the third day, when they could be fairly described as very severe. After this they more gradually but relentlessly increased until the sixth and seventh days when they had attained an appalling gravity. On the eighth day a pseudo crisis occurred, but symptomatically this was limited to the temperature, which declined to normal, the other symptoms continuing unabated and the temperature subsequently rising. On the ninth day prostration was so profound that for a time death seemed imminent. Later the general symptoms underwent slight improvement, but with further extension of the pneumonic process, until the fourteenth day, with termination by lysis during the following four days.

The highest daily temperature during the first two days was under 102.5; from the third to sixth days it reached 104.2; on the seventh 101.6; on the eighth 99.3; from the ninth to the fourteenth 99.8 to 100.3; from the fifteenth to eighteenth 99 to 99.4; afterwards normal. The cough was, for the most part, of moderate severity, although on many days it was slight and on a few severe. Expectoration was less free than usual. characteristic, and, after the first two days, contained pneumococci. Thoracic pain followed the advancing pulmonary involvement although not severe. The weaker and some of the stronger reflexes were in abeyance, as marked by absence of yawning and sneezing. retention of urine, incontinence of the bowels, etc., until the eleventh day, after which they gradually resumed their functions. On and after the fifth day the patient became restless, delirious, listless and more or less profoundly unconscious. After his recovery he had no recollection of any phase of his illness which occurred beyond the first day. Throughout, the skin was moist, and during the first six days perspiration was very free. Labial herpes first appeared on the fourteenth day. Hematogenous jaundice appeared on the ninth day and was noticeable for several days. On the fourth and fifth days thirst was great. A fair amount of nourishment was taken; nausea and vomiting occurred only twice. During the first week the bowels were loose, the movements offensive and flatus extraordinarily abundant. The urine was, during the first week, normal in quantity for the patient, but during the second week the excretion was about doubled. Hyaline and especially granular casts appeared on the third day, the latter soon becoming extremely numerous and marvelously uniform in size and appearance. On the fourth day there was present 2 per cent. of albumin; on the fifth day 5 per cent.; on the sixth day 3.5 per cent.; with a gradual decline until the thirteenth day. when it disappeared. On the seventh to ninth days hemoglobin was notably present. The choroids were present, to 14 per cent. on the second day; 0.75 on the fourth day; 10 per cent. on the fifth day; 2 per cent to 3.5 per cent. from the ninth to eighteenth days.

On the third day the blood showed 5,500,000 erythrocytes and 7,400 leucocytes, and of the latter 92 per cent. were polynuclears and 0.2 per cent. eosinophiles On the fifth day there were 7,320,000 erythrocytes and 9,533 leucocytes, with absence of eosinophiles. On the eighth day the erythrocytes had fallen to 3,720,000; the leucocytes had risen to 22,200, and the serum was highly colored with hemoglobin. On the tenth day, with 12,000 leucocytes the polynuclears had fallen to 83½ per cent. and the eosinophiles had reappeared and numbered nearly 2 per cent. After the eighteenth day, and with apparent convalescence, the erythrocytes remained at about 3,700,000, the leucocytes at 7,000 to 12,000, the polynuclears increased and the eosinophiles reduced.

The pulse was at first moderately, and later markedly reduced in tension, of moderate frequency and, after the sixth day, at times irregular. From the second to the ninth day its frequency ranged between 100 and 128, subsequently not rising above 94.

Cardiac murmurs, sought for many times daily, were not detected. The respiration rate ranged on the second and third days up to 38, on the fourth to ninth days up to 52, subsequently gradually declining to 22 on the eighteenth day.

On the second day the pneumonic lesion was definitely located in the middle lobe of the right lung, from whence it extended, by fits and starts, to every portion of both lungs except the apex and anterior portion of the upper lobe of the left lung, the last detected involvement of fresh tissue occurring on the thirteenth day. Resolution began and had made considerable progress in those parts of the lungs which were early hepatized before the latest invasions had begun, and pursued an ordinarily rapid course, so that by the 25th day air entered every portion of the lungs and râles could only be detected after coughing or very deep breathing, and only in a few circumscribed localities.

Aside from the exceptions mentioned and considering the severity of the case, convalescence pursued an ordinary course until the twenty-ninth day. On this day, while sitting up for the first time, in a reclining chair, the patient suddenly felt an unusual weakness come over him; he was placed in bed, whereon he fell asleep, awakening after an hour with pain in the right shoulder and side of the neck. During the following few hours similar pains, followed by soreness, tenderness and more or less swelling, was noticed in almost every part of the body, notably in and about the joints of the fingers and toes; the wrist and ankles; the shoulders; the elbows, knees and hips, etc.; in the parotid glands, spleen, kidneys, etc.

There was moderate photophobia with impairment of vision; the eyes were tender on pressure and moving them was painful. There was a slight but very noticeable hesitation in speech; the tongue was thick and its movements painful. There was slight impairment of auditory acuity and, after a few days, there developed a peculiar aberration of hearing, in which the patient noticed a lisping quality in ordinary voices. There was tenderness on pressure over the stomach and spleen, and the latter was demonstrably increased in size. The urine was moderately hemorrhagic. After a few hours it was noticed that the entire surface of the body was unequally but thickly covered with minute red spots, which later became purple in color.

Six hours after the onset of these symptoms a very slight direct aortic murmur was detected; on the following day the murmur was loud and distinct, continuing so for several weeks, and, in a lesser degree, permanently. Embolic showerings of more or less profuseness followed at irregular intervals, the last seven days after the first.

During the week of these embolic eruptions the temperature rose to 103, the pulse to 118 and the respirations to 28, with subsequent rapid subsidence of these symptoms. The leucocytes increased to 20,000, with an initial increase in polynuclears and a diminution of eosinophiles. It is, however, interesting to notice that after a few days, with a leucocyte count ranging from 10,000 to 15,000, the polynuclears decreased to 68 per cent., the lymphocytes increased to 25 per cent. and the eosinophiles increased to 3 per cent. Numerous blood cultures proved sterile and no bacteria were detected in the stained specimens.

The subsequent history of the case may be summarized as follows: The parotid swelling and the auditory and ocular phenomena gradually disappeared within three weeks. The pain in the larger joints and muscles abated in about a month. The pain and swelling of some of the tendinous sheaths and smaller joints continued for a very long time and in the fingers is yet present. The profound prostration passed away in a few months. The blood was for several months deficient in erythrocytes and hemoglobin, resuming the normal in about six months. The urine continues to show occasionally a few hyalin casts, these having been absent before his illness. Palpitation and oppression on exertion gradually declined, but are yet present in a slight degree. Although there remains a direct aortic systolic murmur, and at times a faint diastolic as well, the pulse is, for the patient, of normal frequency, i. e., from 55 to 65, and is not more than ordinarily accelerated by moderate exercise. Aside from the occasionally present and slight aortic diastolic murmur there are no evidences of valvular insufficiency. The gentleman is now 70 years of age, in good health and shows but little of his age.

There would be failure in one of my principal objects in reporting this case were I to omit mention of some of the therapeutic measures which were adopted: During the pneumonic attack the patient was bled to 16 ounces on the second day; fluids were introduced into the system as freely as possible by the mouth, rectum and, on two occasions, by hypodermoclysis; diet and intestinal antiseptics were employed to correct the tendency to intestinal putrefaction; nucleinic acid was used whenever the leucocytes manifested a tendency to diminish in number; digitalis and suprarenal extract were given to increase cardiac power and contract the paretic capillaries; oxygen was employed freely throughout; hypodermic injections of camphor were used on two occasions when depression was most profound; antipneumococcic serum was given, in repeated doses early, at the end of the first week, and again on the thirteenth day; the environment and sick-room facilities were all that could be desired; the nursing was intelligent and assiduous; medical attention was, practically, constant.

After the ulcerative endocarditis manifested itself the patient was kept in bed for ten weeks, during six of which he was permitted to make no voluntary movements—not feeding himself, raising his head or turning in bed. After this he gradually resumed voluntary exercise, being allowed to go downstairs for the first time on the 135th day of his illness.

CONCLUSIONS.

1. Endocarditis is an infrequent occurrence in pneumonia, and ulcerative endocarditis is a rare event.

2. When endocarditis occurs it does so comparatively early in the pneumonic attack and ulceration may occur at any time within a period of probably several weeks, the time of embolic showering being possibly coincident with some unusual valvular strain.

3. The symptoms and signs, previous to ulceration, or in the cases in which this does not occur, are equivocal.

4. Any of the valves may be affected, but the preference is for the mitral, although the aortic is oftener attacked than in any other form of endocarditis. The vegetations are quickly formed and massive and they have a marked tendency to ulcerate. Pneumococci are present early, and should ulceration occur the blood becomes infected. Later the pneumococci die and embolic showerings are sterile.

5. In simple endocarditis the diagnosis is always difficult and often impossible. The murmurs and embolic showerings of ulcerative endocarditis render the diagnosis of this condition comparatively easy.

6. The prognosis of simple endocarditis is not well established, but that of the ulcerative form is extremely grave, although not absolutely hopeless.

7. The treatment of pneumococcal endocarditis, both simple and ulcerative, should embrace, as a cardinal and the most important principle, absolute rest in the recumbent posture, thus placing the least possible burden on the heart.

8. There is but little tendency toward cicatricial contraction, and when recovery ensues, even in cases with ulceration, the integrity of the valve may be unimpaired and health completely restored.

DISCUSSION.

Dr. James B. Herrick, Chicago—I was particularly interested in that portion of Dr. Well's paper which dealt with the possibility of recovery in acute ulcerative endocarditis. Of course, we recognize that it is very difficult to draw any sharp dividing line between the simple form and the ulcerative. Yet, by the complex symptoms, chills, petechial spots, embolic phenomena, emaciation, bacteria in the blood, etc., we are justified in making a diagnosis of ulcerative endocarditis. That ulcerative endocarditis need not necessarily prove fatal may be argued on *a priori* grounds. Other cases of septicemia, e. g., streptococcic puerpural septicemia, may recover even though severe. Another argument that may be advanced for the possibility of recovery from this disease is the relating of such cases as reported by Dr. Wells. When one looks through the literature on this subject much surprise is expressed on finding how many cases have been reported. I have been particularly interested in the subject of late, and I have found some 30 or 40 cases of reported recovery from this form of the disease. While it is very easy to pick flaws in the histories of these cases and to say that they do not conclusively show that the disease was ulcerative endocarditis, yet each history has been carefully given by skilled observers whose judgment must be given some weight. Another line of argument is to be found in the study of autopsies on those cases dying from mechanical lesions induced by the valvular trouble. No more interesting work has been done than that of Harbitz. A few years ago, in a monograph on this subject, he divided endocarditis into two classes, toxic and infectious. This second class he again divided into two forms; (*a*) where the clinical manifestations were of the pyemic type, with chills, fever, sweat, etc., which run a [illegible] terminating in death; in this class we fi [illegible] (*b*) the clinical symptoms are less violent and at autopsy changes may be found which are ulcerative and, as a rule, the pneumococci or, more often, the streptococci, are to blame. In a certain number of cases, dying from the mechanical effects, there are found the same anatomic changes as are found in the second group of fatal cases, but the micro-organisms have lost their virulence. By inoculating experiments he found them degenerate and dead. He found scar tissue and calcification and other evidences at attempts at healing. So that, arguing along these three lines of *a priori* reasoning, clinical experience and postmortem observation, we may say that, in the small percentage of cases, particularly when the pneumococcus or *streptococcus* is the organism that produces the lesion, recovery is possible. If this is so it must modify the very unfavorable prognosis given in such cases and should encourage us in our efforts to cure. The prognosis need not be so grave as before. We should make more careful bacteriologic examinations of the blood and so determine the micro-organisms that are doing the damage.

Dr. Wells, in closing—I wish to say in a few words that which I consider to be very important concerning the endocarditis of rheumatism and of pneumonia. As is well known, rheumatic endocarditis attacks the tissues of the valves, producing thickening; contraction follows with consequent deformity of the valves. This contraction is progressive until its limits are attained, and many months are required before the full damage can be measured or estimated. I do not believe the same to be true in the endocarditis of pneumonia; there being but little tendency to subsequent cicatricial contraction of the tissues of the valve. If there should, perchance, be recovery from the initial lesion recovery with fair valvular action may ensue, unless the ulceration has been very extensive. Certainly in the endocarditis due to pneumonia the chances of recovery are infinitely less than in the endocarditis due to rheumatism, but if the patient recovers at all it is possible that recovery may be more complete. Another very important point which I wish to emphasize is that examinations of a very large number of postmortem reports show conclusively that it is difficult and often impossible to recognize the presence of even large valvular vegetations during life, no matter how carefully or skilfully they may be searched for. In the case reported Dr Babcock could detect no murmur previous to ulceration, and I am sure none was present during this time when the patient was under the closest observation. The only change noticed in the cardiac movement was a tendency for six days to slight irregularity of rhythm.

EXCISION OF THE GASSERIAN GANGLION.

WITH REPORTS OF TEN CASES OPERATED UPON BY THE HARTLEY-KRAUSE METHOD.

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AND
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(Concluded from page 901.)

Complications. Hemorrhage. The most serious and first complication encountered is hemorrhage. That from the external incision and bone, especially at the anterior angle, from the anterior branch of the middle meningeal artery, is profuse. William Perry had a case of meningeal hemorrhage from the flap and the patient died of meningitis on the fourth day. For this reason the bone is not divided in this position until the last act of the osteoplastic flap formation. If the artery is free on the surface, it may be ligated at this point, or if it be in a bony canal, as it was in 55 per cent. of the skulls examined by Dollinger,[11] it can be compressed by plugging the opening, or, better, by indenting the bone with a blunt punch.

A second source of hemorrhage is from the venæ Santorini, with the separation of the dura. The separation should be carried well into the anterior portion of the middle fossa, so that the second branch of the nerve is encountered at the foramen rotundum first. The dura should then be separated backwards until the third branch is reached, and for one-third to one-half an inch posterior to the foramen ovale. It is possible by this process to entirely avoid opening the middle meningeal artery or exposing the foramen spinosum, as Dollinger found in 59 per cent. of the skulls examined by him that the artery was situated at least this distance behind the foramen ovale.

The hemorrhage from these veins can be controlled by a few minutes' gentle packing, and time is saved by patience at this point. When the packing is removed the hemorrhage is slight and the operation may be proceeded with. The venous hemorrhage in one of Dollinger's cases was so great that he had to abandon the operation, and in some of Keen's cases it was profuse.

The third and most serious source of hemorrhage is from the middle meningeal artery at its point of exit from the foramen spinosum. In some of the cases of hemorrhage recorded the location is not definitely stated, but simply that it was severe and uncontrollable. Keen's experience was most trying, as in four out of eleven cases he had to abandon the operation temporarily in order to control the hemorrhage. In three of these cases it was of venous origin and in one from the middle meningeal at the foramen spinosum. In a fourth he controlled the hemorrhage by tamponing, but the patient died of coma and hemiplegia. In two other cases he had bleeding from the torn middle meningeal at the base, but did not have to postpone the operation. In one of Koenig's cases the hemorrhage was fatal. Czerny had two severe hemorrhages in three cases; one required plugging of the foramen spinosum and the other was controlled by the cautery on the twelfth day. Finny used the tampon, but the patient died in seven hours. Schlange postponed operation for three days in one of two cases on account of hemorrhage. Willy Meyer reports severe meningeal hemorrhage.

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[11] Cent. für Chir., 1900, p. 1089.

The cases of hemorrhage have been so numerous and severe that special attention should be given to its control. For venous hemorrhage the tampon is all-sufficient, whether the hemorrhage be from venæ Santorini or the sinuses, as the blood pressure in both is very low. The bleeding from the middle meningeal artery can not and should not be controlled by tampon except where the tampon is inserted into the foramen and allowed to remain. When the artery runs in a canal in the bone, the canal wall can readily be compressed with a punch. A large tampon, as a means of controlling hemorrhage from the middle meningeal artery, only serves to cover the source of the hemorrhage. The ligation of the external carotid is the legitimate and rational means of control. If we do not adopt the suggestion of Friedrich, to place this ligature in position without tying, as an ante-operative procedure; its application should be imperative when the hemorrhage is encountered. From our experience we should agree with Dollinger that ante-operative ligation is not necessary. The fourth source of hemorrhage is from the cavernous sinus. This occurs in the final preparation of the ganglion for evulsion. It is often very profuse and fills the field of operation. By carefully adjusting the retractors or by means of the index finger of the left hand it can be controlled while the operation is being completed. The tampon is ample for its permanent control, and even this is not usually necessary, as on the removal of the retractors the dura falls back against the bony surface and the hemorrhage ceases.

Injury to the cerebral tissue occurs through lacerations of the dura in the process of making the bone resection. These lacerations should be immediately closed with fine catgut sutures, as otherwise, in the subsequent compressions of the brain, the cerebral tissue may be forced through the rent in the dura. The brain admits of considerable displacement without injury, provided this is produced by broad elastic retractors. It is our belief that the greatest trauma to the brain has been produced by the tampons during and after the operation. The lower the bone incision the less likelihood of trauma of the brain. In the Hartley-Krause operation, as originally described, the opening in the bone extends at least three-quarters of an inch too high. The brain trauma should be very materially lessened in the Cushing operation. All the tampons should be removed within the first forty-eight hours.

Sepsis. Of the cases reported as dying from sepsis, the principal cause was exposure of the drainage tract after the operation, as in Case 4 of our series, and one reported by Halstead. A septic meningitis immediately followed the operation in a number of cases. The amount of manipulation, sponging and instrumentation in this operation is great, and it is surprising that the cases of sepsis are not more numerous. The danger of infection from the drainage tract can be lessened by making this opening in the most dependent portion of the posterior angle of the incision. We believe that an unnecessarily large number of cases have been drained. It is important to preserve the bone in the Hartley-Krause operation, as otherwise a large depressed area is left which subsequently disfigures the patient. In several cases the bone became infected and necrotic, but the necrosis was a sequence and not a cause of the infection. The Cushing operation affords decided advantages in drainage, as the opening is on a lower level and the drain can be carried back close to the ear. Care should be taken in this operation that the temporo-maxillary articulation is not injured. A. E. Halstead reports one case of ankylosis of the jaw following it, but does not state whether the articulation was opened or whether the ankylosis was a sequence of fibrous contraction about the joint.

Recurrence of the pain after the removal of the ganglion is so rare that a few of the cases in which it did recur will be given somewhat in detail.

Friedrich's case.[12] Woman, aged 64 years. During operation had to tampon twice on account of severe hemorrhage. Ganglion and branches were removed completely. Operation on left side. Fifteen minutes after awakening patient complained of pain in the left lower jaw. Next day, after operation, had pain in the right temporo-maxillary joint. Two days later she dropped some of her words and showed slight mental disturbance. Pain later extended from the right side, where it was constantly present, across median line of nose to left side of nasal bridge. Four months later she had a very severe pain in the entire area of distribution of the left trigeminus, not spasmodic, but boring. Several peripheral operations were performed later in this case, with the result that finally some relief was obtained. Friedrich thinks that in this case he could eliminate hysteria. He is of the opinion that the peripheral nerves were regenerated, as he is positive he removed all of the ganglion.

Garre's Case.[13] Twisted the ganglion out with forceps. only a small portion of the first division remaining. After operation sensibility was preserved in the area of distribution of the first and second divisions, but the patient was absolutely free from pain. In area supplied by third division sensibility was lowered only. There was complete loss of sensibility where peripheral operations had been done and around flap. One year after operation patient was free from pain. Soon after this, however, began to have lightning pains on operated side, from ear to zygoma. He thinks the pain was due to regeneration of nerves from ganglion. At the time of a second operation, fifteen months later, no trace of the ganglion could be found, but he did find a "string." extending from dura into both foramina. He divided this and plugged the foramina with bone. Patient was free from pain for fifteen months, then it again recurred. Operated again; pulled nerve out of infraorbital canal. No pain for three months, when it again recurred. Numerous peripheral operations followed, until finally patient was permanently free from pain. In this case it is evident the ganglion was not completely removed at the time of the first operation.

Rose has two recurrences, which were attributed to the fact that the ganglion had not been completely removed.

Keen's first two cases recurred, because he broke up the ganglion in removing it. He admits incomplete work.

Krause says there is no regeneration when the peripheral branches are divided, and Horsley takes the same stand. Both admit that this statement is not absolute.

Carson[14] states that in the cases collected by Tiffany and himself, up to March, 1899, there were 208 cases of removal of the Gasserian ganglion, with 21 failures. In many of the cases of "recurrence" the pain was very slight, but these cases were included among the failures.

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[12] Deut. Zeit für Chir., 1899. Bd. 52, Hft. 3 und 4.

[13] Verhandl. d. Deut. Gesell. f. Chir., 1899.

[14] St. Louis Med. Review, March 18 and 25, 1899.

This makes the percentage of recurrence about 10. Of the 21 cases, Carson states that the ganglion was entirely removed in 6, and of these the return of the pain in 3 was so slight as to be hardly worthy of consideration. In two of the cases the pain recurred on the opposite side of the face.

There were no recurrences in any of our operations. The patients mention the unpleasantness caused by the absence of sensation on the side of the face. A few of them say that a sensation of traction or drawing of the corner of the mouth and nose is noticed, and occasionally they have complained of an accumulation of food between the cheek and teeth—due to the anesthesia of the mucous membrane and the paralysis of the muscles of mastication on that side.

Mortality. Carson's statistics: 100 cases, ages from 36 to 73 years, 11 per cent. Tiffany:[15] 108 cases, 24 deaths (22.2 per cent.) due to: shock, 8; sepsis, 8; brain trauma, 2; brain abscess (from trauma), 1; brain trauma and edema of lungs, 1; sixth day after operation, 1; debility on fourth day, 1; apoplexy on tenth day, 1; cause unknown (death on fourth day), 1.

The mortality in the last 142 cases (which includes, in addition to Carson's 100 cases, 42 collected from the literature by ourselves), shows a reduction from 22.2 per cent. in Tiffany's cases to 15 per cent. in ours. The operation must always be considered as a grave procedure, and justified only after the less serious procedures have failed to relieve. In the young, however, it is our conviction that the ganglion will have to be removed, and it should therefore be the primary operation of election in these cases.

In the 42 cases collected by us there had been 66 operations on the nerve branches beside extractions of teeth (in many of them the matter of previous operations was not mentioned) showing an average of one and one-half peripheral operations for each individual from whom the ganglion had subsequently to be removed.

INDICATIONS FOR THE OPERATION.

1. Where all internal medication and the removal of external irritants have failed.
2. Where all branches of the nerve are involved in the pain. Here it should be a primary operation.
3. Where individual branches only are involved and relief has not been secured after the peripheral operation.
4. In cases where formerly divisions at the base were indicated.

REPORT OF CASES.

Case 1.—Mrs. K. M., Lincoln, Neb., housewife, aged 53, was admitted to Mercy Hospital, Dec. 17, 1895.

Family History.—Mother, 85 years old, living and healthy; father deceased, the result of an accident; two sisters living and enjoying good health; husband and one boy well.

Personal History.—Patient enjoyed excellent health until sixteen years ago, when she was attacked with the present trouble. Was married at the age of twenty. Had one child; no miscarriages nor abortions. Never suffered from gout, rheumatism, nor any kind of disease. Had sustained no injury to the head. Had not suffered from severe emotional excitement, nor mental over-taxation previous to present illness. Menstruation normal.

Present History.—Sixteen years ago, after a hard day's work, patient was attacked with a "stroke" or "shock," which prostrated her to the floor. The shock consisted of a severe sharp pain in the entire right side of the face which lasted about ten minutes. She could not open her jaws, and remained for a time as though completely paralyzed. This was the onset of the attacks of chronic neuralgia for which she sought relief. The attacks occurred every few hours in the beginning, but for the last six years a spasmodic contraction of the muscles of the right side of the face, with closure of the right eye, accompanied by intense pain, occurs every fifteen or twenty minutes, day and night. Excitement, pressure on the face, or slight draught will bring on an attack. In the interval, the face is painful. The right half of the tongue appears to be the most painful spot and for that reason conversation is carried on in a low muttering tone, and has to be interrupted frequently when the attacks come on.

Examination.—No deformities or irregularities in the head or face; sight normal; nose free from obstruction. Teeth on the right side had all been extracted with the hope of relieving the neuralgia. No defect in the mouth or fauces; external meatus and drum normal. Heart and lungs normal; no irregularity in abdominal organs; pelvic organs normal; urine normal; no enlargement of glands; epitrochlear glands normal. The area of pain extends from right superciliary ridge down the entire right side of the face to the lower margin of mandible, from the anterior border of the ear forward to the middle line of the forehead, nose, lips, and tongue. An electrode placed over any part of the face produced intense pain.

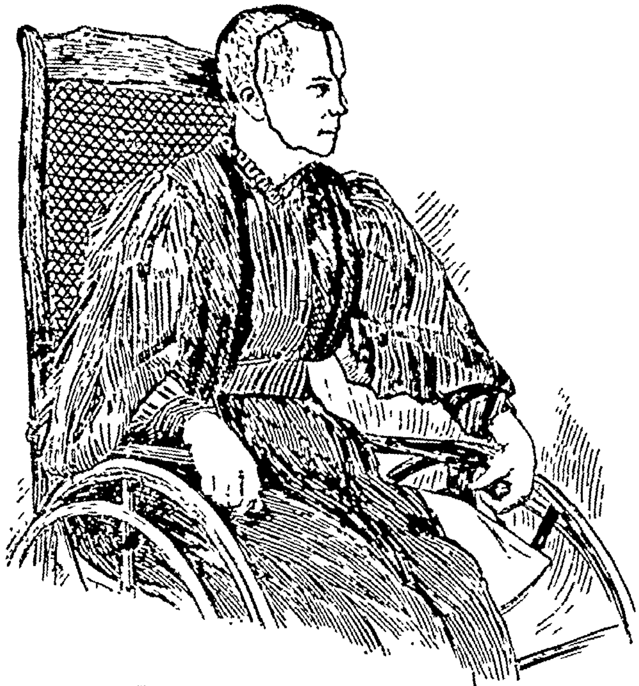

Fig. 1.—Line of complete anesthesia.

Operation.—The patient was operated on December 24. Chloroform was used. The head was placed in a somewhat elevated position and turned to the side. The details of the operation were as described above. The evening after the operation the patient was conscious and she said she was entirely relieved from pain, suffering only from the soreness at the position of the wound. Forty-eight hours after the operation the gauze packing was removed. A small quantity of serum, blood and detritus, but no cerebrospinal fluid, escaped. The patient expressed great relief after the gauze was extracted, as she said the pressure seemed to be taken out of her head. At no time did her temperature reach 100 degrees. Her improvement was very rapid. She was able to sit up in a week, and in two weeks left the hospital. The accompanying cut (Fig. 1) shows the line of anesthesia three weeks after the operation. A letter from the patient, dated Aug. 20, 1901, states that she has had no return of pain. The only inconvenience experienced is the absence of sensation on the right side of the face.

Case 2.—John G., Ossian, Iowa, male, aged 52, German, merchant, married, was admitted to Mercy Hospital April 7, 1896. He has several children, all well. He received a bullet-wound in the army. He enjoyed excellent health up to seven years ago, when he began to have attacks of pain on the right side of the face. In the winter time he would have them every day, or, at least, every second day. In summer he might go for a week without an attack. Last winter they increased very much in severity and duration.

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[15] Anns. of Surg., 1896, vol. xxiv, p. 575-619.

Examination.—He is of phlegmatic temperament; responds slowly to questions; appears to be suffering from some mental disturbance. Complains of pain in an area about the size of a dollar above the right superciliary ridge. During the attack the pain extends over the greater portion of the face. Eyes, nose, mouth, and ears normal; has some digestive disturbance; lungs and heart normal; urine negative.

Operation.—April 9. Incision the same as described above. In this case the dura was opened in making the osteo-plastic flap and a considerable quantity of cerebrospinal fluid escaped. The packing was withdrawn seventy-two hours after operation and this was followed by a discharge of cerebrospinal fluid, which was stopped by tying the provisional suture. The patient made a rapid recovery. The numbness of his face annoyed him considerably. There was no pain after the operation. The ganglion and root were removed in one mass; the root and branches separate and distinct. Convalescence was rapid; the patient was up and about the room in a week, and left the hospital three weeks after the operation. Careful examination of this patient Oct. 15, 1901, shows that his general health is excellent. He still has anesthesia of entire right side of face, but does not complain of any inconvenience on account of the paralysis of the masseter and buccinator muscles. He has had no ophthalmia and has not suffered pain since the operation. There was no inconvenience expressed from the loss of sensibility to pain in the eye.

Case 3.—Mrs. H. W. L., housewife, aged 40, American, was admitted to Mercy Hospital Sept. 16, 1898.

Present Illness.—For the past five years patient has suffered from severe pain in the left side of the face. This pain comes on irregularly in paroxysms, is associated with twitching of the facial muscles, and affects especially the area supplied by the two upper divisions. She has had all of the teeth in the upper jaw on the left side removed, but with no benefit.

Previous History.—Patient has been married ten years. Has had three children, but all died young. A number of years ago she had erysipelas and rheumatism. Family history, negative.

Operation.—September 21. Ether anesthesia. Hartley-Krause operation, the ganglion being considerably lacerated during its removal. The dura was punctured, and a considerable quantity of cerebrospinal fluid escaped. The hemorrhage, which was moderate in amount, was easily controlled by compression, the cavity sponged dry, and packed with a strip of iodoform gauze. The osteo-plastic flap was replaced and fixed in position by continuous suture, the gauze drain being allowed to come out at the lower anterior angle. Highest temperature recorded was on September 23, when it registered 101 degrees. Temperature reached normal October 4 and remained so. Up to October 4 she suffered considerable pain in back and head, and slept but little, often being delirious during the night. After that date the pain ceased, and she slept well every night. She was discharged from the hospital October 16, recovered.

In a letter received from the patient June 13, 1901, she says there has been no recurrence of pain or twitchings, she has no difficulty in masticating her food, and has had no trouble with eye. She also states that her health is better now than ever before; that she eats and sleeps well, and has gained flesh.

Case 4.—Mr. J. M., Irish, aged 59, farmer, was admitted to Mercy Hospital, Nov. 2, 1898.

Present Illness.—Began about nine years ago with very severe pain in right supra- and infra-maxillary regions, occasionally extending into the right temporal region. The pain has continued since onset until the present time, is paroxysmal in character and is always brought on or aggravated by cold and exposure. Latterly, the attacks have increased in frequency and severity, so that the patient has scarcely any rest. Medical and dental treatment have been without effect.

Previous History.—Malaria six years ago; otherwise negative.

Family History.—One brother died of pulmonary tuberculosis; mother died of "carcinoma of the breast."

Operation.—November 5, ether anesthesia. Hartley-Krause operation. Hemorrhage was moderate in amount and easily controlled by compression. Cavity at site of ganglion packed with iodoform gauze, which was allowed to come out of the scalp incision at the anterior angle. Evening temperature 101 degrees in the axilla. For the next five days temperature ranged from normal to 100.2 degrees, and during this time he complained much of pain in the head. On the morning of the fifth day he was found with his dressings displaced, the opening exposed and the cerebrospinal fluid escaping on the surface without protection. The next day the temperature rose to 103 degrees and he became more restless and semi-comatose. On November 12 at 9 p. m. the temperature reached 106 degrees in the axilla, with pulse of 160, and he died the next morning from acute septic meningitis.

Case 5.—Mr. W. A. G., American, aged 66, engineer, was admitted to Mercy Hospital April 13, 1899.

Present Illness.—Two and a half years ago patient began to notice a tingling sensation at the root of tongue on the right side. This developed into paroxysms of sharp, lancinating pain involving the whole right side of the face, at first at intervals of about an hour, and of late much more frequently. The intensity of the pain has steadily increased and at present is almost unbearable. The right side of the face is alone affected and the pain does not extend onto the scalp. The upper teeth on the affected side have all been extracted. He has been in the habit of taking, on an average, 12 grains of morphin daily, at times increasing the dose to 22 grains. He is in a very low, feeble condition physically, and has reached the stage of desperation, a very unfit case for operation.

Previous History.—Does not drink or smoke to excess. No history of syphilis. Typhoid and "coast" fever in 1875, while in Africa. Rheumatism and "sciatica" twenty years ago. In 1890, patient had an attack of right-sided hemiplegia, which lasted only fifteen minutes.

Family History.—One sister died of some brain disorder; otherwise the history is negative.

Operation.—April 15. Hartley-Krause operation performed under ether anesthesia. Considerable hemorrhage when the dura was separated from the base of the skull. Iodoform gauze drain inserted. Temperature 102.4 degrees the night of operation, and continued between 100 and 102 degrees until April 17. On the afternoon of the day of operation it was noted that the left side of the body was paralyzed. This continued, however, only three hours, when motion on that side became normal. Patient was restless and mildly delirious after the operation, and complained of severe pain in the head. On the evening of April 17 his temperature rose to 105.2 degrees in the rectum, with pulse 148, and respirations, 60. He died at nine o'clock. Autopsy not permitted.

Case 6.—Mr. P. G., German, aged 67, laborer, was admitted to Alexian Brothers' Hospital, Sept. 20, 1899.

Present Illness.—Patient began to have pain in the jaw on the right side seven years ago. The pain was not continuous at first, but would come on in cold weather. He had several teeth extracted with no benefit. For the past two years pain has been present constantly, starting in the upper jaw and radiating upward over the right side of the face and head. The supra-orbital nerve was extremely sensitive to pressure, and the pain for the past few months has been intense and of a sharp, shooting character.

Operation.—October 5. Chloroform anesthesia. Hartley-Krause operation. There was very little hemorrhage during the operation, and none from middle meningeal artery. Area of operation was irrigated with normal salt solution after retractor was removed. The osteo-plastic flap was replaced and scalp incision closed with continuous silkworm-gut sutures. In the evening the temperature was 99 degrees; afternoon temperature next day was 100.6 degrees. After this, his condition was good, temperature at no time exceeding 101 degrees. Patient sat up in bed until the morning of October 20, when he

Case No.	Operator and Reference.	Date of Operation.	Duration of Disease. Years.	Sex, Age, Side.	Previous Operations.	Method Used.	Result.		Remarks.
							Immediate.	Final.	
1	Bartlett, Willard; Ans. Surg., June, '01, p. 683	10, 10, '00	17	F, 60, L	All teeth removed 15 yr. previous; infra-orbital evulsed, 1898.	Cushing.	Recovery	Paral. of 3d, 4th and 6th nerv's 4 wk.; recov.	Slight corneal ulcer, which soon healed, followed operation.
2	Bartlett, W.; Anns. of Surg., 6, '01, p. 683.	11, 27, '01	Many.	F, 50, R	All teeth removed	Cushing.	"	Eye palsies as in above; rec.	No corneal ulceration.
3	Beck, Carl (Chicago), personal communic'n.	Nov., '97.	4	M, 48, L	3d div. resected 2 yr. ago; 2d div. 1½ yr. ago.	H. K.	"	Recovery	
4	Ibid	May, '99.	10	M, 42, L	14 previous operati'ns; all possible methods from neurectomy to removal of bone.	H. K., with removal of bone.	"	"	
5	Ibid	Oct., '99.	1½	M, 60, R	3 previous ops.; 1, remov'l of cyst of face; 2, neurectomy of 1st div.; 3, neurec. of 1st and 2d div	Ibid	Death 54 hours after operation.	...	Carcinoma of parotid: oper. undertaken to relieve pain without hope of radical cure.
6	Ibid	12, 10, '00	Several	M, 68, R	Neurectomy of 2d div.; neurectomy of 3d div.	Ibid	Recovery	Recovery	
7	Coelho, S., Revue de Chir., Par. 5, 10, '99.	2, 28, '98.	6	F, [illegible], R	Infra-orbital resec. in '91; inf. maxill. in '95.	Temporal method; H.K.	"	"	
8	Cushing, Harvey, Jour. Am. Med. As., 4, 28, '00	Aug., '99.	10	M, [illegible], R	Infra-orbital evulsed, '96; inferior dental in '97.	Cushing.	"	"	Results learned by personal communication.
9	Ibid.	Dec., '99	12	M, 55, R	Infra-orbital evulsed in 1892.	"	...	"	
10	Ibid	Jan., '00.	2	M, 38.	Infra-orbital and inferior dental evulsed in 1899.	"	"	"	
11	Ibid	Jan., '00.	7	F, 60, L	Infra-orbital evulsed in 1897 and 1899	"	"	"	
12	Erdman, J. F., N. Y. Med. Jour., 5, 6, '99.	8, 8, '98	4	M, 53, L	Supra-orbital, supra-trochlear and infra-orbital nerves excised in 1897.	Hartley-Krause.	"	Recovery from pain.	Eye lost 7 wk. after operation from ulceration.
13	Halstead, A. E., personal communication.	11, 9, '00.	6	M, 53, R	None	Cushing, mod. by Hartley.	"	Recovery	Ankylosis of jaw followed operation.
14	Ibid.	3, 3, '01.	7	F, 57, L	Inf. maxillary divided 2 years before.	Ibid	"	"	
15	Ibid.	5, 12, '01.	10	M, 50, L	None	Ibid	Death 5 days after operation.	Death.	Developed suppurative meningitis; had chronic nephritis.
16	Krause, F., Muen. Med. Woch., 6, 25—7, 2-9, '01.	3, 24, '99.	12	F, 41, R	Resections of 1st and 2d divisions in 1898.	H. K.	Recovery	Rec.; pain in l. side later.	
17	Krause, F., ibid.	8, 26, '99.	10	M, 63, L	Resection of 2d division twice.	"	Failure.	Failure.	Pain was not confined to l. side before oper.; lesion evidently central.
18	" " "	11, 2, '99.	...	F, 59, R	2d and 3d divisions resected in 1896.	"	Recovery	Recovery	
19	" " "	1, 23, '00.	8	F, 44, R	Lücke-Braun of '98; rem'd during next pregnancy.	"	"	"	
20	" " "	2, 23, '00.	Several	F, 58, L	2d and 3d divs. operated upon many times.	"	Death 6 hr. after opera.; collapse.	...	Had chronic nephritis.
21	" " "	5, 7, '00.	4	F, 30, L	4 previous operations; infra-orbital resected.	"	Recovery	Recovery	
22	" " "	6, 13, '00.	17	M, 46, R	Infra-orbital [illegible]	"	"	"	
23	" " "	8, 27, '00.	7	[illegible]	[illegible] temporal and inferior dental nerves resected.	"	"	"	
24	" " "	8, 29, '00.	15	F, 65, R	1st and 2d divs. resected in '98; no relief.	"	"	Death in 21 da.; cardiac dis. & pneumonia	
25	" " "	Mar., '01.	8	F, 60, R	2d division resected in '98; pain recurred.	"	"	Death on 20th day; coma.	Grayish patch of soften'g at base due to pressure from retractor.
26	" " "	6, 6, '01.	7	M, 64, L	Infra-orbital resected in '94; pain recurred	"	"	Recovery	Sclerotic middle meningeal torn.
27	" " "	6, 17, '01.	25	M, 63, L	[illegible]	"	"	"	
28	Keen, W. W., Jour Am. Med. Asso., 4, 28, '00.	2 opera's. 11, 9 9	½	M [illegible]	November, 1899.	"	No improvement.	Pain continued.	Endothelioma involving Gasserian ganglion.
29	Levings, A. H., personal communication.	10, 24, '00	9	F, 41, R	Infra-orbital nerve removed '98.	"	Recovery	Recovery	
30	Mammen, E., personal communication.	11, 20, '94	2	M, 56.	...	"	"	"	Entire ganglion not removed; second division bet. ganglion and foramen caught by forceps and evulsed; complete relief resulted.
31	Murphy, J. B.	11, 5, '98.	9	M, 59, R	Dental operations only.	"	Death; 11-13, '98	...	
32	" "	11, 25, '99	8	F, 43, R	...	"	Recovery	Recovery	
33	" "	10, 5, '99.	7	M, 67, R	Dental operations only.	"	Death; meningitis; 10, 22, '99.	...	
34	" "	10, 31, '99	4½	F, 51, R	...	"	Recovery	Recovery	
35	" "	4, 15, '99	2½	M, 66, R	Dental operations only.	"	Death; 4, 17, '99.	...	
36	" "	5, 30, '00.	4	M, 50, L	2d div. of 5th resected 8, '99; no pain for 8 mo.	"	Recovery	Recovery	
37	" "	6, 15, '01	½	M, 44, R	...	"	"	"	
38	Renton, J. C., Brit. Med. Jour., 11, 17, '00.	Nov. '98.	7	M, 57, L	...	"	"	"	
39	Same as above	Aug. '99.	5	F, 67, R	Inferior dental excised; pain returned in 3 mo.	"	"	"	
40	Spellisy, J. M., Anns. of Surg., 1900, vol. xxxi.	7, 19, '99.	9	M, 55, R	Several teeth removed; also infra-orbit'l and inferior dental nerves in 1895 and 1896.	H. K.; preliminary ligation of ext. carotid.	"	"	
41	Thomas, J. Lynn, Brit. Med. Jour., 10, 28, '99.	2, 9, '99.	3	M, 34, R	Teeth extracted	H. K.	"	"	
	Williams, N. T., Phila. Med. Jour., 8, 10, '01.	9, 2, '99.	More than 8	F, 38, R	Nerves divided '93; teeth extracted, sup. maxil gang removed '94; inf. max. resected '96; intracranial resection of nerves 8, 30, '99.	"	"	"	Curetted out ganglion.

complained of severe headache, and rapidly lost consciousness. Afternoon temperature on this date was 104 degrees and on the next morning it was 104 degrees. He died at noon. The rapidity with which this patient lost consciousness would suggest apoplexy and with the sudden elevation of temperature indicate that the hemorrhage was basilar. Autopsy was not permitted.

Case 7.—Mrs. W. B. W., housewife, aged 51, American, was admitted to the West Side Hospital Oct. 29, 1899.

Present Illness.—Four years ago patient was attacked suddenly with severe agonizing pain near right ala of nose, the pain shooting upward into the right temple and downward over the lip. Pain was constant for three weeks and since she has had repeated attacks at intervals of from one to three days. Longest interval of freedom from pain was three months. One year ago last July she fell and fractured the skull just above the left angle of the eye. While in bed after this injury she was free from neuralgia. During the past year the pain has been constantly present, eating, drinking, or almost any movement of the eyes being sufficient to bring on a paroxysm. Her appetite is poor, and her bowels constipated.

Previous History.—Had the diseases of childhood. Menstruation regular, but always preceded by some pain. Menopause at 37 years. No children or miscariages. Had la grippe five years ago. Family history negative.

Operation.—October 31, the Hartley-Krause operation. Hemorrhage moderate in amount and easily controlled by iodoform gauze packing, which was brought out through the lower posterior angle of the skin incision, and allowed to remain forty-eight hours. Time of operation 55 minutes. No hemorrhage followed removal of packing. The night of the operation temperature was 101.4 degrees and ranged between 99 and 101 degrees until November 4, after which it began to decline, reaching normal nine days later. Sutures were removed November 16 and the next day she sat up in a chair all day. She was discharged from the hospital November 19, recovered.

Examination.—Aug. 12, 1901. Has occasional momentary twitchings in right side of nose at intervals of several days. Also complains of burning or smarting sensation in region about right eye. These attacks come on at intervals of several hours or days. Also has a sensation of "pressure" in right side of face; weakness of muscles of mastication of right side, and occasional dribbling of saliva from right side of mouth. She also has the same smarting pain in left hip and left lower limb. This latter is at present her principal complaint. General health good. Temporal muscle is markedly atrophied, and there is anesthesia of area supplied by fifth nerve.

Case 8.—Mrs. C., housewife, aged 43, American, was admitted to Mercy Hospital Nov. 23, 1899.

Present Illness.—Began eight years ago without any apparent cause with excruciating pain radiating along the right lower jaw. The attacks of pain were paroxysmal, lasting about one to one and a half minutes and recurring every four or five minutes. This condition would persist for from four to seven days, when she would have an interval of freedom from pain of perhaps several weeks. Each attack now lasts longer than in former years, and the pain is usually localized in the lower jaw, extending from there into the side of the head. The pain is sharp and lancinating, and now extends upward into the temporal region. It is accompanied by lachrymation on the affected side and a sensation of burning in the cheek. The most tender spot is at the symphysis. The slightest movement of the mouth or facial muscles is often sufficient to bring on an attack and at times she is obliged to remain in one position forty-eight hours or longer to avoid a paroxysm. Patient states that she is less likely to have the attacks if she keeps her bowels open.

Previous History.—Has had no children and no miscarriages. Pneumonia at nine years of age and malaria twenty years ago.

Family History.—One brother and one sister died of "consumption."

Operation.—November 25. Ether anesthesia. Hartley-Krause operation; no unusual complications occurred. Highest temperature recorded was 102.4 degrees on the fourth day. Temperature ranged between 99.4 and 102 degrees until December 3, when it reached normal and remained so. Patient was discharged from the hospital Dec. 22, 1899, recovered.

In a letter (March 19, 1900) patient states she has had no recurrence of pain, and is in perfect health.

Case 9.—Mr. W. N., American, aged 50, superintendent in a factory, was admitted to Mercy Hospital May 29, 1900.

Present Illness.—Four years ago began having pain in left side of face just at left border of nose, below eye. This gradually increased in severity and was associated with twitching of the facial muscles. Nine months ago, second division of fifth nerve was resected at the infraorbital foramen. Complete relief followed operation and continued for eight months. Three weeks ago pain and twitching recurred and have persisted. The twitching is almost constant, but the pain is intermittent and of a sharp, shooting character. Sensation in area supplied by the second division is gradually returning. General health good.

Personal History.—Drinks very moderately. No venereal history. "Typhoid fever" twenty-one years ago. "Sciatica" on right side eight years ago.

Examination.—Heart, lungs and abdomen negative. There is a hyperesthesia in the area supplied by the second division.

Operation.—May 30. Ether anesthesia. Hartley-Krause operation. Venous hemorrhage during the removal of the ganglion slight and caused no trouble. Scalp incision was closed without drainage by means of interrupted silkworm-gut sutures. Temperature 100.4 degrees in the evening. Convalescence was uninterrupted, and the sutures were removed June 6. Wound had closed by primary union. Patient was discharged from the hospital June 23, at which time it was noted that the tongue deviated slightly to the left, when protruded, and the left corner of the mouth drooped a little.

Jan. 26, 1901. Patient has had absolutely no pain since the operation. The usual area of anesthesia is present, and there is paralysis of the muscles of mastication on the left side. He has had no eye trouble.

September, 1901: There has been no recurrence of pain since operation.

Case 10.—Mr. F. S. (referred to us by Dr. Lowey), German, aged 44, laborer, was admitted to Mercy Hospital June 14, 1901.

Present Illness.—Patient states that six months ago he "took a bad cold" which settled in the right side of the face. The pain has been especially severe over the lower jaw. He is unable to speak without holding his face in his hands. Several weeks after the onset the pain disappeared, but recurred in a short time with increased severity. He has suffered intense and almost continuous pain for the last three weeks, so that he has with difficulty been restrained from suicide. General health is good.

Previous History.—Born in Germany; has been nine years in America; no previous illness.

Operation.—June 15. Ether anesthesia. Hartley-Krause operation. Moderate amount of venous hemorrhage during the removal of the ganglion which, however, was easily controlled by pressure of the gauze packing under end of retractor. Small gauze drain through lower angle of wound. Scalp incision closed with through-and-through sutures of silkworm gut. During the manipulations the dura was punctured and some cerebrospinal fluid escaped. The middle meningeal artery gave no trouble at any time.

June 16 temperature registered 100 degrees in the axilla. Patient restless and complained of severe pain in the head. Two days later the pain in right side of head was still present. Gauze packing was removed without causing any hemorrhage. Provisional sutures tied.

June 20, pain less. Patient had some epistaxis and was restless; June 24, some superficial suppuration at the site of the drain; temperature, 101 degrees.

After June 24 temperature dropped to normal and remained so, the suppuration subsiding rapidly.

Patient was discharged from the hospital July 24 absolutely free from pain and presenting the usual area of anesthesia in the parts supplied by the fifth nerve. The occipito-frontalis muscle on the right side is paralyzed. There is no paralysis of the external ocular muscles.

In November, 1901, Dr. Lowey reports that the patient has been absolutely free from pain or inconvenience of any kind since operation.

Case 11.—Referred to Dr. A. H. Levings of Milwaukee, Wis., for operation. The following is Dr. Levings' report:

Personal History.—Mrs. S., aged 41. In 1890 she suffered the loss of two children, following which she was very much depressed and worn out. In 1891 was conscious of pain over and about the right eye, which gradually increased in severity. In 1896 the supraorbital nerve was evulsed for the relief of the pain which at this time had become very severe. The pain was relieved but very little and was now most severe beneath and around the eye, in the right temple, and in the top of the head. In 1898 the infraorbital nerve was exposed, its canal broken up, and the nerve seized as far back as possible and evulsed. This operation gave some relief for a short time and then the pain was perhaps more severe than before, coming on in terrific paroxysms, during which time the patient would be almost beside herself. The pain, as a rule, was confined to the branches of the first and second divisions of the fifth nerve. At times it would extend into the inframaxillary. The patient became somewhat addicted to the use of morphin, which drug seemed to her almost a necessity in consequence of the terrific suffering.

Operation.—Oct. 24, 1900, the Gasserian ganglion was removed. A curvi-linear incision was made from just in front of the ear upwards and forwards, terminating at about the external angular process of the frontal bone. The bone was sawed through and an effort made to turn it down with the flap of scalp. The bone crumbled and much of it was lost. The middle meningeal artery was broken across and the hemorrhage therefrom gave some little trouble. There was hemorrhage again from the same vessel at the foramen spinosum. There was considerable venous hemorrhage at the base when the brain was lifted.

The ophthalmic branch of the fifth nerve was first located and traced backwards and then the supramaxillary branch as it passed through the foramen rotundum was located, and last, the inframaxillary branch. These branches were finally divided near their exit through their various foramina and the ganglion removed. A few strands of catgut were placed in the wound for drainage. There was some slight infection in the scalp wound but none in the deeper tissues. The woman made an uninterrupted recovery.

At the present time, thirteen months after the operation, she is looking well, is in fair nutrition, complains some of a burning numb feeling in the right side of the tongue, and a stiff numb feeling in the right side of the face. The severe pain from which she formerly suffered has entirely disappeared.

Clinical Report.

FOREIGN BODY IN THE VITREOUS CHAMBER.

LEE WEBER, M.D.
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The following case came under my observation Aug. 17, 1901:

A. B., aged 20, mechanic, while working on a piece of Bessemer steel—he holding a large chisel in both hands and stooping forward and a fellow workman striking with a sledge—was struck in the left eye by a piece of steel, which was thrown off by the cutting edge of the chisel, from the piece they were cutting.

He was seen about half an hour later and presented the following conditions: There was a small wound in the upper lid of the left eye, slightly inward from the center and about one-fourth of an inch from the lid margin.

On raising the lid a corresponding wound five millimeters long was seen at the sclero-corneal margin and a small wound in the iris near its base. Blood obscured the pupillary area and clouded the anterior chamber, but after dilating the pupil and waiting for the blood in the anterior chamber to settle to the bottom, vision was found to be equal to counting fingers at eight feet.

By ophthalmoscopic examination a long splinter of steel could be seen behind the lens extending downward and backward toward the point where it rested on the lower wall of the eyeball about one-half of an inch back of the lower sclero-corneal margin. There was some blood in the vitreous, so that the view was partly obscured, but the general outline of the foreign body could be made out and the lower end seen to be resting on the choroid at the lower part of the eye.

After the usual antiseptic precautions and the use of cocain (Dr. A. B. Hender assisted), the eye was rotated downward and it was found that the steel had passed through the upper lid, sclero-corneal margin, iris and edge of the lens and was entirely within the vitreous chamber.

It was thought best not to try to extract it at the point of entrance, as this would necessitate further wounding of the iris in order to reach the foreign body and dragging it through the iris might result in its becoming incarcerated in the sclero-corneal wound.

The eye was then rotated upward and an incision made one-half an inch back of the lower corneal edge at the point where the end of the steel was thought to rest. A pair of iris forceps was then passed through the wound and the steel seized at the first grasp and slowly drawn out. Slight hemorrhage followed, but was checked by the use of adrenalin chlorid. Atropin was used, the eye bandaged and the patient sent to bed.

The steel was found to be a splinter measuring three-fourths of an inch in length, one-eighth of an inch in width and one thirty-second of an inch thick, with rough edges. Within forty-eight hours the lens became opaque, but there was no inflammation or increase of tension and very little pain.

The eye made a steady improvement, so that by September 26 the patient returned to work with the eye quiet and clear, tension normal and vision of only shadows, but with the hope that in a few months an operation might be done to improve his vision.

On May 6, 1902, the largest part of the lens was found to have been absorbed, leaving only the capsule and nucleus. Vision was only shadows. The eye was then cocainized, the pupil dilated and both the anterior and posterior layers of the capsule cut, making an opening about as large as the normal pupil. There was very little reaction and the eye made a rapid recovery.

On May 16 refraction gave the following result:

O. S.+12.50 Sph.+1.25 Cyl. 120° Vision=20/20+15.00 Sph. +1.25 Cyl. 120° enables patient to read small newspaper print.

At the present time, one year after the accident and three months after the operation, the patient has normal vision and absolutely no disfigurement of the eye. By ophthalmoscopic examination a small amount of white exudative tissue is to be seen near the entrance wound, but as it is of small amount and entirely behind the iris, it does not interfere with vision in the least and that it will cause any trouble by contraction, such as detachment of the retina, seems highly improbable as a full year has elapsed since the accident without any indication of trouble.

The principal points of the case are the unusual length of the foreign body and the fact that its direction and momentum were just sufficient to place it in almost the only position it could occupy and be entirely within the vitreous chamber. Also worthy of note are the absence of any severe symptoms after the accident and operation and the saving of the eye with perfect appearance and normal vision after so large a foreign body had passed entirely through it.

See That You Are Registered.—A case recently occurred in this city, says the *Peoria Medical Journal*, which strongly emphasizes the need of physicians attending to the matter of registering their certificates under demands of the law. Dr. H. T. Thomas, who has been practicing medicine here for fourteen years, found it necessary to sue for a claim for professional services; but when the case came to trial he was surprised to find that he had absolutely no standing in court, not having registered his certificate, and was in addition mulcted in a considerable sum assessed as costs.

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OBSTINATE ACUTE ARTICULAR RHEUMATISM.

According to statistics, acute articular rheumatism has its annual curve of highest frequency at the end of October and during November. Fortunately modern therapeutics has put us in a position to cope successfully, as a rule, with the worst symptoms of the disease. Old practitioners readily admit that they no longer see the prolonged agonizing sufferings in acute rheumatism which were not infrequent thirty or forty years ago, before the introduction of the salicylates. These remedies are not a specific for the disease, but if prescribed with due reference to the indications of the individual case they give symptomatic alleviation to the majority of patients.

About one in every eight cases of acute rheumatism, however, fails utterly to be relieved by the salicylates. Some of these after a period of primary relief refuse to progress beyond the slow running subacute state. A few of the obstinate cases will yield promptly to the administration of some other coal-tar product, such as antipyrin or phenacetin, drugs that in German hands, when given in doses of from sixty to ninety grains a day, have often been found useful in severe forms of rheumatism. In a certain number of patients, however, the symptoms persist and there is prolonged discomfort in spite of any and every medication.

Most of these cases will be found to have, beside rheumatism, some associated systemic condition, on which the persistence of the symptoms really depends. Practically any infectious disease that causes the presence of toxins in the circulation may give rise to arthritic symptoms. Hippocrates pointed out that joint pains and even swelling and tenderness may accompany dysentery. Other enteritic conditions beside true dysentery, especially if associated with diarrhea, may in like manner cause articular symptoms. Influenza is well known to give rise to joint symptoms, and when it follows rheumatism by only a brief interval may cause what appears to be a relapse of the rheumatic condition.[1] On the other hand, if an attack of influenza precedes rheumatism, the latter affection is prone to run a prolonged course. Gerhardt pointed out nearly a quarter of a century ago that bronchiectasis, especially with offensive expectoration, often has a tendency to cause coincident joint complications. These are usually considered to be of toxic origin, though the not infrequent occurrence of brain abscess in these cases shows that virulent microbic, as well as toxic material, may find its way into the circulation of such patients. How much these toxins may affect usually unreactive structures such as bone and connective tissue, even when at a long distance from their seat of origin, can be seen by the drumstick fingers with knobbed ends that occur in bronchiectasis. It is not surprising, then, that rheumatic arthritis should be prolonged in these cases since the joints are in a state of low resistive vitality.

It has come to be very generally recognized of late years that what a patient takes into a case of rheumatism with him is the most important element for the prognosis of his ailment. Cardiac or nephritic conditions particularly are apt to influence the course of the disease for the worse. Blood dyscrasiæ are also serious hindrances to the development of that vital tissue reaction that enables the joints to throw off the infectious material. Hemophilic and scorbutic patients are especially liable to suffer from prolonged arthritic symptoms. The joints are delicate tissues whose trophic condition is easily influenced since more work is demanded of them than of any other structure except the heart. Any lowered state of general vitality is reflected first in these overworked tissues, and this accounts to a great extent for the often falsely called rheumatic pains that occur in run-down subjects.

Nervous conditions, too, affect the trophic state of the tissues very soon, and in neurasthenic patients prolongation of the joint discomfort of acute rheumatism often occurs. In many cases of supposed subacute rheumatism, where the joint affection—redness and tenderness with swelling—migrates frequently from one joint to another, what is really present is a neuropathic arthritism very similar to the condition known familiarly as hysteric joint. Alcoholism, by its effects on nerves, and consequently on the trophic condition of the tissues, always makes the result of trauma more serious than it would otherwise be. It is not surprising, then, to find that alcoholic patients usually suffer from more prolonged attacks of rheumatism than others. It is especially in patients who have suffered from nervous manifestations as the result of overindulgence in alcohol that hospital physicians have become accustomed to expect long drawn-out cases of rheumatism.

Careful examination of the patient for the existence of any of these accessory factors enables the physician properly to modify his prognosis of the case at the outset. The recognition of the secondary condition that may cause the rheumatism to run a longer course also gives the most helpful indication for treatment. The salicylates are not a specific for rheumatism, but they will relieve the acuter symptoms of practically all cases in which an idiosyncrasy or contraindication to their use does not exist, provided some secondary condition of the joints be not present to interfere with Nature's reaction when pain and fever are relieved. Of course, where mistakes of diagnosis are made, as, for instance, when gout is treated as rheumatism, the salicylates will, according to the common experience, bring but a small measure of relief. How easily such an error may be made can be best realized from the fact that even at Johns Hopkins one patient was treated three times for rheumatism before the discovery of tophi showed that the condition was really gout. Cases of rheumatism obstinate to the salicylic treatment are always suspicious and complicating conditions should be looked for. Diligent investigation will usually reveal some good reason for the therapeutic failure.

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[1] Nothnagel's Specielle-Pathologie und Therapie, vol. vi. Pribram.

THE UNIVERSITY MEDICAL SCHOOL.

If anyone could have foreseen thirty years ago the advances that have been made in medical education in this country the present condition would probably have been considered something very near perfection. At present, however, the defects are still prominent, and how they are to be remedied is one of the leading questions of the day. One evil certainly has not decreased: the multiplication of medical colleges beyond the actual needs with the very thinly disguised chief object of advertisement of their faculties; this has probably just about reached its culmination—it would be hard to say how very many more could well be endorsed. We may look, however, for at least a check in their multiplication if the states' present tendency to more rigid regulations for preliminary requirements continues, and some signs of the times are especially favorable as regards this point. The pressing question of the day is, what is to be the ultimate trend of the present progress, what is to be the ideal institution of the future? The differences of opinion are largely a question of detail, but some of these are important. The question whether the medical school should necessarily be an adjunct to a university, that of the teaching of the scientific and the more practical branches separately, that of the practical hospital service requirements, and many others, are being discussed, not so much on the side of their desirability, but of that of their practicability and necessity. We are going over ground that has been worked over already to a considerable extent, but which still furnishes room for thought and argument.

In a recent and widely noticed address on "Medicine and the Universities"[1] Dr. Lewellys F. Barker, of the University of Chicago, reviews the general progress of medical instruction in this country, and gives his ideas as to its needs. A special weakness of the methods of the present day, in his opinion, is in the fact that the teaching of medicine is not an exclusive life-work of those who are engaged in it, and in this he would include not only instructors in the especially scientific branches, but also those who have the chair of general internal medicine and of surgery as well of the specialties. The university medical school, he holds, should be like the other departments of the university, with its professors devoting themselves solely to instruction and original work, and in no way dependent on other work or tempted to seek income from outside sources. There are few, probably, who would disagree with the view that the professorships of anatomy, physiology, bacteriology, etc., should be endowed and their holders freed from all necessity of adding to their income from other sources. It might be somewhat difficult to prevent eminent chemists who hold professorships from being consulted by outside parties, and certain other chairs might be in the same situation. When we come to the professorships in the more practical courses this difficulty is increased, and with the specialties it is still greater. The professors in these branches must be recognized authorities in their departments, otherwise the prestige of the school will suffer. As such they will be in demand, and even if they are supplied with the amplest hospital facilities it is not to be expected that their services can always be confined within the limits. They must be constantly widening their experience and the best results can not always be obtained in a limited field of observation.

Daily experience in the practice of medicine has certain advantages and the teacher thus trained is, in our opinion, other things being equal, better qualified, more practical and less purely theoretical than one whose professional duties are confined within medical college and hospital walls. Even a whole series, moreover, of general and special hospitals attached to a university could not confine the labors of a specialist in public demand. Dr. Barker's ideal, therefore, seems impracticable in this particular, however admirable it may be in other respects. It is hardly likely that we can ever have the really university medical school meeting his definition in this country, even without the requirements above questioned. We may, however, have all the schools we need that more or less approach it. The most promising future of medical education may perhaps be found not only in the greater scientific facilities and higher standards, but also in the enlarged clinical instruction of the student. The practical hospital year may yet, as it should, be the finishing one of the medical course and the facilities may yet be provided in the present multiplication of hospitals. The great expense of carrying out all of Barker's suggestions would be an obstacle to their realization—except it may be in one or two favored places—but that alone would not be the greatest obstacle. The impossibility of isolating the highest medical ability which it should command would be a greater one.

MECHANICAL THERAPEUTIC AGENCIES.

With more accurate knowledge of pathologic conditions, their causation and natural course, the means employed by physicians for the prevention and cure of diseases have often become very different from those formerly in vogue. Surgical treatment has always been largely a question of mechanical skill and manual dexterity, the most important elements in the sucpractice of surgery being ability to arrive at accurate anatomic diagnoses from practical knowledge of pathologic anatomy and to be able to relieve or remove such diseased conditions by mechanical measures. Surgical treatment has been rendered much easier and more certain in its results by the discovery of anesthesia and by the perfection of antiseptic measures. The management of the patient up to the time when treatment is intituted is identical, whether the physician be a surgeon or a practitioner of internal medicine, and the education and training demanded of each up to such a time is the same. While surgeons have quickly adopted mechanical measures in the treatment of diseases because it has always been considered that such are their legitimate therapeutic weapons, the followers of internal medicine have often continued to direct their efforts too exclusively to the administration of drugs to the neglect of mechanical means.

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[1] American Medicine, July 26.

For years the value of massage and gymnastic measures in the relief of various conditions have been known, but physicians have been slow to adopt them, and massage has most often been relegated to inexperienced persons, who are "strong and can rub well." This has furnished the opportunity for osteopaths to establish themselves by appropriating one of the old, well-established means of cure. Physicians continue to be chagrined by their failure to cure certain patients whom they have treated by drugs alone, whom later events have shown could be relieved by a masseur who goes by the name of osteopath. Baths of various kinds are also valuable therapeutic measures which have been neglected by physicians. The therapeutic use of electricity has been more generally utilized, but not to such a degree as its value deserves. Fortunately the uses of light and x-rays as therapeutic agents are being carefully worked out by men of recognized standing in the profession, and it is to be hoped that they may be kept in some measure from becoming the property of unskilled and illegitimate quacks.

The rational explanation of the neglect of these mechanical therapeutic agents, if we may employ a rather unsatisfactory expression, by physicians lies in their lack of practical knowledge regarding them. If anything has been taught in medical schools concerning these matters it has usually been done in a very imperfect and superficial manner and only as an unimportant appendix to the other therapeutic instruction. It is highly desirable that students be given practical instruction by well-qualified teachers in these various subjects and that they be impressed with the idea that it is no more below the dignity of a physician to apply massage to an injured joint or diseased muscle than to administer a dose of calomel or perform an amputation. In smaller towns and in country places, where skilled masseurs can not be obtained, the physician must undertake the performance of these operations personally, and he should be prepared to do it skilfully and so as to obtain the desired results. With his knowledge of normal and pathologic anatomy the physician should be better qualified for this work than anyone else.

THE SALT OF THE EARTH.

The press cables report that Dr. Koulapye of St. Petersburg removed the heart from a child who had died twenty-four hours before and by the use of a certain salt solution made it beat with normal regularity for one hour. The statement, if confirmed, is of great interest. The use of massage, needle puncture or stimulation by electricity or alcohol have started hearts that had ceased to beat and prolonged life for some hours, and even carried the patients beyond the crisis to safety, but this new achievement is a step in advance. Salt seems to be concerned in some very vital processes. It has been urged that its overuse causes cancer, and evidence appears to favor the contention. Not long since it was reported that by means of a salt solution in which chlorid of sodium figured prominently ova could be developed without the necessity of any male element entering into the process. In view of the trend of events, it is certainly a matter for congratulation that the distribution of salt on the earth is not such as to lend itself kindly to the grasp of a monopoly, so that, when salt becomes the most potent of earth's forces, it still may be had by all people. Perhaps in the future we may appreciate why three-fourths of the earth's surface is occupied by salt water.

PRIMARY SARCOMA OF THE IRIS.

In their comprehensive study of sarcoma of the iris[1] Wood and Pusey bring out the point that in forty-one of the cases of enucleation for this disease histologic examination showed involvement of other parts than the iris. As would be expected from a knowledge of this fact the results as to complete cure by iridectomy are not so favorable as those of enucleation, and the authors draw from their studies the important conclusion that "When the diagnosis of iris sarcoma is established, the globe containing the growth should be immediately enucleated." There often has been observed in dealing with malignant tumors a distinct tendency to leniency in operative measures, the idea being to remove the tumor with as little disturbance as possible of the normal structures. That this has been a mistaken leniency is illustrated in the history of the operative treatment of practically every operable localization of malignant tumors. In the case of sarcoma of the iris the chance to remove the tumor by iridectomy with preservation of the eye and its vision is, no doubt, a temptation toward mistaken leniency, to resist which requires exhaustive studies of a clinical and histological nature like the one of Wood and Pusey. And, as in the case of cancer of the breast and of other organs, it appears that in the case of iris sarcoma, too, the limitations of the growth of the tumors can not be determined definitely in every case by the ordinary means of clinical observation. The microscope shows that the sarcomatous infiltration frequently extends far beyond the apparent bounds of the tumor, even into other structures than the iris. Under these circumstances the surgeon can not be justified in preserving an eye, thereby perchance in the end sacrificing a life, but he must advise the sacrifice of the eye in order to preserve life. The wish that always must arise in studying the results obtained by investigations of this character is this: Oh, that every surgeon, no matter in what field, would control his own work in the operative treatment of malignant tumors by conscientious and exhaustive microscopic studies to determine its thoroughness! The most brilliant operation is of no avail when a little focus or two of tumor cells are left behind, and if the surgeon were to study his own material carefully surely he would soon learn wherein his work could be improved. Such control of surgical work is laborious. It can not be done well unless the surgeon himself is trained in pathologic anatomy and histology, but matters may be expedited greatly by thorough organization of surgical services in which the several members of the staff work in unison toward the same end.

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[1] Archives of Ophthalmology, 1902, xxxi, 323-383.

THE ATTACK ON THE MEDICAL ADMINISTRATION OF THE PENSION BUREAU.

It seems to us unfortunate that at every national meeting of the Grand Army of the Republic there should be an official, or more or less official, attack on the pension department of the government. No nation has ever been more generous to its defenders; there is nothing in history that compares with its course in this respect. Nevertheless each year the representatives of the nearly one million pensioners attack the administration of the Bureau of Pensions for its watchfulness for the interests of the government. This year the medical officers of the bureau are the special objects of attack; they are charged with being narrow, according to the press reports, "even to the extent of requiring claimants to establish their right to a pension beyond all reasonable doubt." That, of course, a reasonable doubt as to its justice should not stand in the way of a pension, seems to be taken for granted, and with such a mental state it is perhaps useless to strive. The charge of unfairness against the medical officers is, however, one that can be discussed, and apropos to this subject there appears very opportunely an address[1] by the Medical Referee of the Bureau of Pensions, delivered by request at the first annual meeting of the National Association of United States Pension Examining Surgeons at Saratoga in June last. This official, Dr. Raub, explains how, by the act of June 27, 1890, and subsequent acts, it has become necessary that each claimant's capacity for earning a support by manual labor must be considered in the adjudication of the claim, and that the bureau is only acting according to the letter of the law. Its critics assume apparently that the intention was directly contrary to the utterance, and demand that the medical employes of the bureau should violate their official oaths to please them. It may be that sometimes a deserving case meets with difficulties and delays owing to special conditions, but there can not be many such, and the medical referee shows from the records of the office how much need there is of care and watchfulness to prevent imposition. In times past there has certainly been a culpable looseness and lack of conscience on the part of many pension claimants and examiners and ample excuse for more rigid legislation. The result has been that the government and the taxpayers have been unduly burdened. The medical officers of the bureau have but one aim, that is to give all deserving cases what they are entitled to under the law and to prevent the issue of pensions to the undeserving. If in doing what is their obvious duty they are thus attacked it is not to their dishonor, but to their credit. The tax of $140,000,000 a year on the people of the United States is no trifling matter, and he is not a patriot who for mere sentimental considerations or interest would recklessly increase it. If there is a need anywhere for watchfulness for the interests of the people it is here; the medical examiner has a responsibility that is by no means light.

Medical News.

CALIFORNIA.

Hospital Burned.—The Physicians' and Surgeons' Hospital, Stockton, was one of the buildings destroyed at the recent fire in that city, September 28.

Speeding the Parting Dean.—The faculty of the medical department of the University of Southern California, Los Angeles, gave a dinner in honor of Dr. Henry G. Brainerd, the retiring dean, September 18. Dr. George L. Cole presided, and Dr. H. Bert Ellis, on behalf of the faculty, presented Dr. Brainerd with a loving cup as a token of the esteem of his associates.

"Chiropractic Physician" Arrested.—"Dr." H. D. Palmer, Los Angeles, was arrested, September 26, charged with practicing medicine without a license. The information on which the complaint was based is said to have been that the accused, who calls himself a "chiropractic physician," treated an advanced case of tuberculosis by jumping on and otherwise maltreating the patient, thereby "stamping out the germs." Incidentally, the patient died.

GEORGIA.

Personal.—J. W. Eberhardt, Hartwell, has removed to Gilman, Texas.

Another Attempt at Blacklisting.—The Macon Medical Society has again adopted a blacklist, and hereafter any man who is financially able to pay and refuses to settle his doctor's bill will not be able to secure medical attendance unless the fee is paid in advance. Worthy objects of charity and people who are temporarily embarrassed from sickness or financial distress are not to be placed on the list.

Fined for Neglect.—For failing to provide medicine and medical attention for his children when they were ill, Scion Justice, a white man of Dublin, was fined $300 and costs by Judge Adams, of the City Court, or given the alternative of serving twelve months on the chain gang of Laurens County. This is believed to be the first instance in Georgia where a fine has been entered against a believer in Eddyism or faith cure.

University Medical Department Opens.—On October 1 the medical department of the University of Georgia, Augusta, opened for the year with appropriate exercises. Dr. Noel M. Moore delivered the opening address, in which he sketched the history of the college, from 1882, when in the incorporation papers of the Medical Society of Augusta, Ga., one of its objects was said to be "the establishment of a school of medicine." The college, with this year, begins a four-year course.

Georgia Pasteur Institute.—The second annual meeting was held in Atlanta, October 3. The physician's report showed that 65 patients had been treated, and that not one who had completed the treatment had died of rabies. The institute will be moved shortly to a new location at 85 Luckie Street. The following officers were elected: President, Dr. Henry R. Slack, La Grange; vice-president, Dr. J. H. McDuffie, Columbus; treasurer, Dr. C. D. Hurt; secretary and physician, Dr. James N. Brawner, and pathologist, Dr. Claude A. Smith, all of Atlanta.

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[1] Buffalo Medical Journal, October.

ILLINOIS.

Personal.—Dr. George L. Williamson, Homer, left for Vienna, October 9, accompanied by his wife and daughter.——Dr. John S. Skelly, Pekin, has accepted the chair of rectal surgery in the St. Louis College of Physicians and Surgeons.

Chicago.

To Increase Hospital License Fees.—Medical Inspector Hunt recommends increasing the license fee of hospitals from $10 to $250 a year, and that issuance depends on obtaining the consent of two-thirds of the property owners, according to frontage. He suggests also that power be given to the board of health to remit all or part of license fees in case of charitable institutions.

Suicide and Influenza.—The 14 deaths from suicide in the last week again call attention to the increase of self-destruction during the last decade. Since the first of the year there have been 321 suicides—an annual rate of 15.2 per 100,000 of population. The rate in 1890 was 12. The Health Department is confirmed, by its researches, in the belief that this increase of self-murder, like the corresponding increase of pneumonia during the period, is due to influenza, and again urges on physicians to prompt diagnosis of this disease and its radical treatment.

Typhoid Epidemic Ended.—The number of typhoid deaths last week—twenty-two—was the same as during the previous week and as in the corresponding week last year, but the duration of the disease in the fatal cases shows that the epidemic is practically at an end and that the continuous pollution of the water supply has been offset by the precautions taken in its use. During August the average duration of the fatal cases was 18.5 days; in September it was 24.3 days; since October 1 it has been 31 days. Returns from various hospitals show 11 per cent. fewer cases under treatment at the close of the week than at the close of the previous week.

Mandamus Applied for in Dunning Case.—A petition for a writ of mandamus to compel State's Attorney Deneen to sign petitions submitted to him for leave to begin quo warranto proceedings against Dr. John R. Neely and Helen S. Hay, requiring them to show by what right they are holding the offices of medical director and superintendent of nurses, respectively, at Dunning, was filed in the Circuit Court October 10. It is alleged that in place of an original examination for the position of medical director at Dunning, which was held last June, a promotional examination should have been held instead, and that Dr. Neely was not eligible for such an examination, as he had never been employed at Dunning or at any Cook County institution.

New Smallpox Nidus Discovered.—During the week 13 cases of smallpox were sent to the isolation hospital. Five other cases were found which had run their course under the supposition that they had chicken-pox. Some of these unrecognized cases attended a parochial school. All attacked were children ranging in age from 1 to 12 years, except one 23 years old. None had ever been vaccinated. A case of smallpox in a public school could not have resulted in such an outbreak, as these schools are well protected by vaccination. The parochial schools are not so thoroughly vaccinated, and vaccination is not a requisite to school enrolment. Had this law been complied with in this school at the beginning of the term the 9 pupils from that school now in the isolation hospital with smallpox would have escaped the disease.

Low Mortality.—With one exception, the number of deaths—403—reported during the month ended October 11 furnishes the lowest October mortality on record for Chicago. The annual rate was 11.53 per 1000. In the week ended Oct. 19, 1901—a phenomenally healthful year in all parts of the world—the total reported deaths were 370, and the annual rate was 10.95 per 1000. There has been nothing in the weather conditions, the character of the water supply, or any of the other factors affecting the public health, to account for this remarkably low death rate. It must be attributed solely to the campaign of education against typhoid fever carried on during the past three months, which has led to greater attention being paid primarily to the prevention of that disease, but also, and quite as valuably, to the increased care of health generally caused thereby.

Lorenz in Chicago.—Prof. Adolph Lorenz of Vienna, whose coming to Chicago was noted in the last issue of The Journal, gave a clinic at the College of Physicians and Surgeons, October 13, in the presence of several hundred physicians of Chicago. Professor Lorenz was introduced to the assembly by Dr. William E. Quine, dean of the faculty. He performed seven operations for congenital dislocation of the hip, all of the patients being children. On the evening of October 14 he was the guest of honor of the Chicago Orthopedic Society at a banquet at the Chicago Athletic Club. On October 15 he gave a lecture and clinic in the amphitheater of Mercy Hospital, under the auspices of the Chicago Medical Society. The subjects of the lecture were "Principles of Bloodless Reduction of Congenital Dislocation of the Hip-Joint," and "Principles of Reduction of Deformities."

LOUISIANA.

New Orleans Board of Health.—The Board of Health of New Orleans reorganized, with Dr. Quitman Kohnke, president; Dr. Sidney L. Theard, secretary; Dr. Joseph A. O'Hara, special medical inspector; Dr. Ernest A. White, meat inspector, and Dr. Paul E. Archinard, bacteriologist.

Personal.—Dr. John A. Rupp has been appointed deputy coroner and ex-officio city physician for the Fifth District of New Orleans, vice Dr. William H. Riley, removed.——Drs. Joseph T. De Grange, Robert W. Walmsley, Edward L. McGehee, Edmund Moss and C. Jeff Miller have been appointed physicians to the New Orleans Street Railway Company.

New Sanitary Laws.—At the quarterly meeting of the State Board of Health the president, Dr. Edmond Souchon, New Orleans, presented the following summary of the recent legislation in the state regarding boards of health:

1. Vaccination shall not be made compulsory except in cases of children attending the public schools of a parish where smallpox prevails, and when the same shall have been recommended by a majority of the local board of health.
2. Any violations of any provision or provisions, or regulation or regulations of the sanitary code shall constitute a misdemeanor, and the offender shall be punished by a fine of twenty-five dollars or thirty days' imprisonment in the parish jail for each and every offense, on conviction before a court of competent jurisdiction.
3. The police jury of each parish shall immediately after the promulgation of this act, and hereafter not later than the third regular meeting of the new police jury term, elect and appoint a parish board of health to consist of three persons, said board to be composed of a duly licensed and registered physician, a resident of said parish, who shall be chairman of said board of health and health officer, and the two other members of said board shall be selected from the police jury of said parish.
4. The term of no parish board shall continue longer than that of the body by which it was appointed.
5. The chairman and health officer of a municipal board shall receive such an annual salary as the city council or legislative body of said municipality may fix and pay.
6 The persons appointed to constitute the city board of health shall serve during the term of the body by which it was elected.

MARYLAND.

The tuberculosis commission which was recently appointed to inquire into the causes and spread of consumption in Maryland met October 8. The work proposed is to issue blanks to physicians for reports on tuberculosis cases, in order to determine to what extent the disease is prevalent. Statistics of hospitals and other institutions, and of city and state health departments will be carefully studied. Especial stress will be laid on methods of infection and methods of prevention. It is hoped that practical results of value will in time result from these studies and reports.

Cornerstone Laid.—The cornerstone of the new hospital at Salisbury was laid October 12. It will cost $50,000, and in honor of the donor, the name will be changed from Peninsula General Hospital, by which the institution has been hitherto known, to the Jackson Memorial Hospital. It will be one of the handsomest public buildings in the state. In the basement will be the apparatus for steam heating and electric lighting, the chapel, mortuary, laundry and kitchen. On the three upper floors will be the official quarters and wards. The address was delivered by Chief Judge Henry Page.

Interment of Dead from Infectious Diseases.—The State Board of Health has adopted the following rules for the interment of persons who die of infectious diseases:

In every case of death from cholera, bubonic plague or smallpox, the body is to be taken charge of at once by the local health officer and buried or cremated within 24 hours. Transportation of such bodies by rail or steamer is absolutely forbidden.

Such a body must be prepared for burial with as little disturbance of its immediate surroundings as possible. It shall be wrapped in the bed covering, secured by bandages; shall be placed in a tight coffin; the wrappings shall be saturated with 40 per cent. formalin or solution of bichlorid of mercury, 1 to 500, and the coffin closed at once.

In the discretion of the local health officer a competent undertaker may be allowed to embalm such a body, provided the body be not removed for that purpose from the spot where death occurred.

The vehicle in which such a body has been transported to the place of burial shall be washed in a solution of bichlorid of mercury, 1 to 1000.

In every case of death from diphtheria, membranous croup or scarlet fever, the body shall be prepared at once for burial by arterial or cavity embalming, or by covering with a layer of absorbent cotton not less than one inch thick, securely bandaged or rolled in a sheet, this covering to be saturated with a solution of 40 per cent. formalin, or bichlorid of mercury, 1 to 500, and the body enclosed in a tight coffin at once. The head and face need not be thus covered, provided that the scalp and face and the cavities of the mouth and nose have been disinfected with an approved germicidal solution.

The lid of the coffin may have a fixed glass panel over the face to permit inspection, but not such as will permit exposure to the air. It shall be unlawful to open the coffin except on written consent and in the presence of a local health officer.

Only persons of adult age shall act as pallbearers in such cases. Interment shall be made within 24 hours of the time of death. Only members of the immediate household and necessary attendants shall be admitted to the house.

These rules are made in the exercise of the authority conferred on the board by Act of Assembly of 1882, Chap. 155. Penalties for infraction are provided.

Baltimore.

The deaths for the week ended October 11 were 183. Only 6 were from typhoid fever with 42 new cases reported, which is a gratifying decline from the previous week.

Personal.—Dr. Joseph Hart was elected a member of the first branch of the City Council, October 6. He is at present a member of the legislature. Dr. J. H. Mason Knox, Jr., sailed October 9 for Bremen.

Women's Medical College Changes.—The following additional changes are announced in the faculty of the Woman's Medical College: Dr. James Bordley, Jr., elected professor of diseases of the eye and ear; Dr. S. Griffith Davis, professor of anatomy, operative and clinical surgery; Dr. Mary A. Waters, adjunct professor of hygiene.

Physicians Resign.—The Supervisors of City Charities have received and accepted the resignations of Dr. Irving J. Spear, resident physician of the insane department at Bayview, and Drs. C. O Gruver and P. L. Travers, assistant physicians in the institution Drs. Samuel Lee Magness and Robert B. Samson have been selected as the successors to Drs. Gruver and Travers. The position vacated by Dr. Spear has not been filled.

Medical Schools Crowded.—The colleges have opened with crowded lecture rooms. The deans are complaining of the difficulty of accommodating the unusually large classes. At the University of Maryland there are about 400. The Johns Hopkins Medical School has enrolled the largest freshman class in the history of the school, 100 students having been accepted, of whom 8 are women. Last year the freshman class numbered 75, of whom 11 were women. The number entering this year has been limited by the accommodations to 100. The total number in the four classes is 264. At the College of Physicians and Surgeons and Baltimore Medical the attendance is equally great.

MASSACHUSETTS.

Tufts College Opens.—The new year of Tufts Medical School, Boston, opened October 1. The incoming class numbers from 110 to 115.

Charges Not Proven.—The trustees of the Worcester Insane Hospital have concluded their investigation of the charges made by twenty-five discharged attendants against the superintendent. They find that the charges are not based on fact.

Personal.—Dr Alice E. Rowe, Springfield, has been appointed assistant physician at the Gowanda (N. Y.) State Hospital for the Insane.——Dr. J. M. Morin, Brockton, has sailed for Europe. He will spend six months in studies in Berlin and Vienna.

Jordan Hospital Burned.—The new hospital presented to the town of Plymouth by E. D. Jordan of Boston and all but completed, at a cost of about $25,000, was badly damaged by fire, September 13. There were no patients in the building as the hospital had not yet been dedicated.

Protest Against Abolition of Bacteriologic Laboratory.—The Somerville Medical Society has appointed a special committee, consisting of the president and Drs. George A. Miles, Frederick G. Smith, and John F. Couch, to protest with the board of health against the abolishment of the bacteriologic laboratory, and to request its re-establishment.

Massachusetts Insane.—According to the report of the State Board of Insanity, there are 7946 insane persons under treatment in Massachusetts. Of that number 7600 are inmates of state asylums. Of the remainder, 165 are the inmates of the McLean Hospital, a branch of the Massachusetts General Hospital. Only 178 are private patients in the 15 small private hospitals.

Stillman Infirmary, Harvard, Opened.—The Stillman Infirmary, the new hospital at Harvard, was opened, September 25, for the use of sick students. Hereafter any student taken ill may go to the infirmary and have full use of all of its privileges. The infirmary will be run on the same lines as other private hospitals, each patient being entitled to choose his own physician.

NEW HAMPSHIRE.

Silver Wedding.—Dr. and Mrs. Frank Blaisdell, Goffstown, recently celebrated their twenty-fifth wedding anniversary.

Dartmouth Opens.—The opening lecture of the one hundred and sixth annual course of the Dartmouth Medical School, Hanover, was delivered by Dr. A. Palmer Dudley, New York.

Medical Candidates for Senator.—Dr. Frederick A. Stillings, Concord, has been nominated for senator from the tenth district, and Dr. Marcellus H. Felt, Hillsboro Bridge, for senator from the ninth district.

Personal.—Dr. Jane Elizabeth Hoyt, after three years abroad, has returned and reopened her office in Concord.——Dr. Richard H. Dillon, Manchester, has been appointed surgeon of Amoskeag Veterans, vice Dr. John F. Dowd, deceased.

NEW JERSEY.

Personal.—Dr. Samuel A. Helfer, president of the Hoboken Board of Health, has returned after a trip to Europe.——Dr. Harry M. Harmon has been elected president, and Dr. Alfred B. Nash a member, of the Board of Education of Frenchtown.

Hospital Staff Changes.—Dr. John B. Probasco, Plainfield, has resigned after nearly twenty-two years of continuous service on the medical staff of Muhlenberg Hospital.——Dr. Walter S. Whitmore, Oceanic, succeeds Dr. Harry E. Shaw, and Dr. Edward F. Taylor, Middletown, succeeds Dr. Edwin T. Field, Red Bank, on the staff of the Monmouth Memorial Hospital.

American Medical Association Fund Goes to Hospital.—The balance of $2200 of the fund raised for the entertainment of the American Medical Association, when it met at Atlantic City, in 1900, has been placed at the disposal of the Atlantic City Hospital. The entertainment committee was indebted to Capt. John L. Young for $1250 for the use of his pier as a meeting place. He generously donated the whole of this amount to the hospital. It is proposed that the $2200 shall form the nucleus of a permanent fund for the benefit of the hospital.

NEW YORK.

Buffalo.

City Water Bad.—The health commissioner has reported to the board of aldermen that the city water in the Prospect reservoir is in bad condition. On September 27 samples contained 500 bacteria to the cubic centimeter. Analysis shows recent contamination.

Fumigating School Books.—The work of fumigating the text-books in the grammar schools and kindergartens of the east side has been completed by the inspectors of the health department, and Chief Clerk Schneider has prepared a statement showing the work done. In all, 54,000 text-books were fumigated with formaldehyd.

Proper Disposal of Dipsomaniacs.—Considerable discussion has recently been had as to the proper disposal of dipsomaniacs. At present the practice is in vogue of sending them to jail by the police and morning justices until they are fit to be released. This makes a criminal of one who is in reality diseased. The authorities have recently been urged to take a more humane view of such prisoners, and for that reason a conference was held between the district attorney, county attorney, police justice, morning justices, sheriff and jailers. It was suggested that a separate hospital for the detention and care of these cases be built on the site of the present jail yard, but finally a committee was appointed to see if a special dormitory can not be reserved at the penitentiary.

New York City.

Clergyman Fined for Practising Medicine.—The Rev. William M. Richie, who has an office in the Presbyterian Building, has been fined $75 for practicing medicine without a license.

Campaign Against Tuberculosis.—The Committee on the Prevention of Tuberculosis of the Charity Organization Society is making good progress. Arrangements have been made for delivering popular lectures in connection with the board of education courses and at the settlement houses.

Physicians at Odds Over a Bill.—It is reported in the daily papers that a St. Louis physician is suing a brother practitioner of New York City for $16,000, which, it is alleged, was agreed to be paid the plaintiff. The services were rendered to the son of the defendant, and extended over a period of one month. According to the petition filed, the bill is computed on a basis of $64.52 per hour, for an eight-hour day. The defendant refuses to pay the bill on the ground that it is exorbitant.

Benevolent Institutions and Public Funds.—Controller Grout is conducting a searching investigation into the management of three or four institutions supported principally from public funds, and has hinted that some of these will be deprived of this support in the near future, and as a result will have to close their doors. In this connection the State Board of Charities has reported that the charges of mismanagement and misuse of funds made against the institution in Lexington Avenue for the improved instruction of deaf mutes, have been found true, and recommends that a complete reorganization be effected within three months.

PENNSYLVANIA.

Philadelphia.

Bequests.—A bequest of $5000 to each of the following institutions was made by the will of the late David Simpson of Collingswood, N. J.: West Philadelphia Hospital for Women; Rush Home for Consumptives, and Polyclinic Hospital, all of Philadelphia.

Appointments at University.—The trustees of the University of Pennsylvania announce the following appointments: Dr. J. L. Gates, assistant demonstrator of pathology; Dr. Hidaya Noguchi, assistant in pathology, and Dr. John F. Carpenter, instructor in ophthalmology.

Advocates Great City Hospital.—Dr. John V. Shoemaker, president of the Board of Charities and Correction, has returned from a European tour. He is a still more ardent advocate of the division of the City Almshouse and Hospital. He favors a great city hospital like those of London and the large cities of the continent.

Health of Philadelphia.—For the week ended October 11 352 deaths were reported, which compares favorably with 404 for the corresponding week of 1901. There was a large decrease in typhoid-fever cases, 55 being reported, as against 110 for the preceding week and 121 for the next preceding week. Only one case of smallpox was reported for the week.

Result of New Filtration System.—Chief Engineer Hill, who has been in charge of the construction of the new system of water works with which the city is now partially supplied, has made a series of bacteriologic examinations of the water filtered at these plants. He states that "A new record has been established by the slow sand filtration system; our system will be the envy of the world." The number of bacteria are said to have been reduced to from 26 to 35 per c.c. The system also clarified the water.

Appointments and Changes.—Dr. John I. McKelway has been appointed by the city department of charities and correction as assistant chief resident physician at the Philadelphia Hospital, vice Dr. George Pfahler, resigned.——Dr. Carl Frese, medical superintendent of the German Hospital for fourteen years, has resigned. Dr. Henry Page is acting superintendent. ——At the recent annual meeting of the corporation of the Kensington Hospital for Women Dr. Charles P. Noble was reelected as one of the directors for the coming three years.

GENERAL.

Navy Medical Estimates for 1903-4.—The Secretary of the Navy has presented his estimates for the support of the naval establishment during the fiscal year ending June 30, 1904. For the Bureau of Medicine and Surgery, $485,000 is asked, an increase of $175,000 over the amount given by Congress for this year.

Government Insane Hospital Report.—The forty-seventh annual report of the board of visitors of the Government Hospital for the Insane to the Secretary of the Interior has been completed. The report is signed by Dr. Frank M. Gunnell, the president of the board. and Dr. A. B. Richardson, the superintendent of the hospital, as secretary. The report says, among other things:

> The admissions for the year were 686, the largest number in the history of the hospital. Of these 297 were from the Army, Navy and Marine-Hospital Service and 389 from civil life. Of the latter 285 were cases of indigent patients resident of the District of Columbia and 51 were non-residents admitted by order of the district courts. The recoveries number 248, or 36.15 per cent. of the admissions, and the deaths 177, which is 6.18 per cent. of the whole number under treatment, and 8.06 per cent. of the average number resident.
>
> The health of the inmates has been good during the year, with the exception of a few cases of typhoid fever during the fall months of 1901.
>
> The appropriations recommended for the hospital for 1903-1904 are as follows: For support, maintenance, etc., of 2,350 patients, at $220 per annum, $517,000. On account of the many extra expenses that must necessarily be met from this fund, connected with the opening of the new buildings and the transfer of patients, with the rearrangement of the entire system of administration, it is not believed to be wise to reduce this estimate.
>
> The repairs to the hospital will require the sum of $25,000.
>
> The sum of $6,000 is requested with which to install a filtration system at the hospital, much of the drinking water being drawn still from the river.

The report concludes with the following recommendation:

> This board is also impressed with the necessity for amendment to the law regulating commitment to the hospital and the discharge of patients therefrom. It is particularly important that authority be given the superintendent to grant trial visits before discharge to such patients as are believed to be in a condition to warrant it, and also to discharge to the custody of friends such as can be safely cared for outside of a hospital and who can not be further benefited by hospital treatment.

CANADA.

Laval University Opens.—The formal opening of the Laval University, Montreal, took place last week. Dr. Severin Lachapelle, dean of the medical faculty, welcomed the medical students. He referred to the proposal to extend the medical course at Laval to five years, and said if the last year was given to practical work it would prove of great benefit.

Bravery Medal for a Physician.—Dr. John Ferguson, Montreal, who was a visitor at the Laurentian Consumption Sanitorium at Ste. Agathe last spring when that institution was totally destroyed by fire, has been presented with a medal by the Royal Humane Society of Montreal, for the bravery he displayed in rescuing many of the patients.

The new Orthopedic Hospital, Toronto, has been formally opened. The new hospital is a most up-to-date structure. It is three stories high, and has wide and spacious verandas, which give it a very homelike appearance. Inside it is laid out most conveniently and economically. There are at present 30 patients. The surgeons in charge will be Drs. Galloway and Mackenzie.

Vaccination in Montreal.—An important by-law of the Montreal Civic Council has recently been adopted by that body. It requires that vaccination shall not be performed by any person but a duly qualified medical practitioner. It shall be performed on strictly aseptic principles. Any person or medical practitioner contravening the provisions of this law are liable to fine and in default of payment thereof, to imprisonment. The fine shall not exceed $40 and the imprisonment shall not be longer than two calendar months.

Toronto Nurses Graduate.—The graduating exercises of the Training School for Nurses in connection with the Toronto General Hospital were held October 10, when eight graduates received their diplomas. The superintendent, in her annual report, stated that since the establishment of the training school, 21 years ago, there had been graduated from it 355 nurses, 60 of whom were now in other hospitals and institutions in positions of responsibility. Dr. George A. Peters delivered the address to the graduating class, while Dr. Charles O'Reilly, medical superintendent of the hospital, presented the diplomas.

FOREIGN.

Prohibition of Arsenic for Paints in France.—The French minister of the navy has officially forbidden the use of arsenical green in powdered form for all painting in his department, and also prohibits the use of white lead, recommending zinc white in its place.

Another Charlatan Fined in Germany.—The "nature healer" Laabs advertised in a Breslau paper that he would cure under guarantee the most serious diseases. When summoned before the court, four of his former patients, all belonging to the upper classes, testified that he had cured them of some serious affection. The medical expert, privat *docent* Puppe, observed that such cases might occur, cured by suggestion, and that the defendant might be convinced of the truth of his assertions. In consequence the nominal fine of about $25 was imposed.

A post-graduate course in tropical medicine has been organized at Paris, open to French and foreign physicians and advanced students. Chantemesse is to lecture on bacteriologic and hematologic technic; Blanchard on parasitology; Le Dentu on surgery of the tropics; de Lapersonne on ophthalmology in the tropics; Wurtz on tropical pathology and hygiene, and Jeanselme on cutaneous affections. Brouardel is the director of the Institute of Colonial Medicine that is organizing the course. His address is 68 rue de Bellechasse, Paris. The course lasts ten weeks. The clinical instruction will be given at the Auteuil Hospital.

Medical Inspection of Candidates for Matrimony Advocated in Spain.—We learn that at the formal opening of the courts at Madrid this fall, the minister of justice in his address proclaimed the necessity of medical inspection of candidates for matrimony. The physician, he observed, should be consulted as much and more than the priest and the justice of the peace. The authorities should refuse to marry persons that science forewarns are destined to people the hospitals, the insane asylums and the penitentiaries. This is the first time that a member of any European government has officially considered the question of the social rôle of the physician in regard to marriage.

Honors to the Founder of Psychotherapy.—Dr. Liébeault of Nancy returned to the town of Favières, where he was born seventy-nine years ago, to spend his birthday. His friends seized the occasion to place a commemorative tablet on the house where he was born. It states that A. A. Liébeault opened a new era in the medical sciences by his discovery of the systematic application of suggestion and induced sleep in the treatment of disease. He is the founder and leader of the so-called Nancy school. The inscription is signed by Voisin, Bérillon and other members of the Paris Société d'Hypnotisme et de Psychologie, and by leading psychotherapeutists of Germany, Sweden and Holland, also Vogt and Forel of the *Zeitschrift für Hypnotismus.*

Miscellany.

Treatment for Felon.—Take a hypodermic syringe and find the sensitive point, or take a lead-pencil and press the point down over the felon until you thus localize the sensitive point. Go down to the periosteum with the hypodermic and inject cocain at this point, and keep injecting it as you draw out the syringe. Then cut down to the periosteum with a bistoury, and with a syringe or probe go down into the pocket and inject carbolic acid. You have then taken the necessary steps to kill the microbe. If you are afraid of carbolic poisoning, put in some alcohol. Put on a loose dressing.—Seneca D. Powell, in *The Post-Graduate.*

Cleft Palate.—A. Vander Veer (Reference Hand-Book of Medical Science) ascribes the cause of this deformity to heredity and the want of a meat diet and of sufficient phosphates on the part of the mother. In confirmation of this view, he cites the fact that several years ago the lions in the Zoölogical Gardens of London were fed upon flesh containing too large bones for them to break and swallow. The young born while this method of feeding was pursued had cleft palates and lived but a short time. The lions were then fed upon small animals, whose bones they could break easily, and the young born afterward had perfectly formed palates.—*Dental Digest.*

Marriages.

Leo. J. Doll, M.D., to Miss Nellie C. Ziemer, both of Buffalo, N. Y., September 24.

James T. Cleveland, M.D., to Miss Emma Hartman, both of Batesville, Ala., October 1.

Ernest C. Fisher, M.D., to Miss Carrie Christian Gilliam, both of Richmond, Va., October 1.

Frank Chaffee Neff, M.D., Kansas City, Mo., to Miss Josephine Cole of Knoxville, Tenn., October 1.

A. J. Meythaler. M.D., Fremont, Iowa, to Miss Alyce Wroten of Independence, Iowa, September 11.

T. Edward Converse, M.D., Louisville, Ky., to Miss Jeanne M. Magnenat of Austin, Texas, September 29.

Lewis E. Allen, M.D., Wichita Mountain, Okla., to Miss Etta Shrieves of Morganfield, Ky., October 1.

Perry Robert Hungerford, M.D., Concord, Mich., to Miss Minnie Marilla Coykendall of Albion, Mich., October 1.

Alva F. Maine, M.D., Alameda, Cal., to Miss Kathryn C. Smith of Webster, N. Y., at Rochester. N. Y., September 13.

Arthur J. Wilkinson, M.D., Alpena, Mich., to Miss Daisy Armstrong of Flowersville, N. Y., at Detroit, Mich., April 30.

R. Douglas Haggard, M.D., New York City, to Miss F. Minter Bailey of Nashville, Tenn., at Franklin, Tenn., March 27.

Irwin Hoffman Neff, M.D., formerly of Baltimore, to Miss Bertha Seliene Bigelow of Birmingham, Mich., September 28.

Deaths.

Morris J. Asch, M.D. Jefferson Medical College, Philadelphia, 1855, who served on the staff of General Sheridan and as his personal physician during the Civil war; a successful specialist on the ear, nose and throat; a member of the New York County Medical Society, New York Academy of Medicine, the Roman Medical Society, the Medico-Surgical Society, the American Laryngological Association; surgeon to the New York Eye and Ear Infirmary, and the throat department of the Manhattan Eye and Ear Hospital, died at the residence of his sister in Irvington-on-Hudson, October 5, after an invalidism of two years subsequent to a cerebral hemorrhage, aged 70.

Abel M. Phelps, M.D. University of Michigan, Ann Arbor, 1873, some time professor of orthopedic Surgery in the University of Vermont and the University of New York; chief surgeon in the Post-Graduate Hospital; vice-president and president of the New York State Medical Society and president of the American Orthopedic Society, died at the Post-Graduate Hospital, New York, from malignant disease of the omentum. October 6, aged 51.

Robert Drayton Earle, M.D. College of Physicians and Surgeons, Baltimore, 1895, a prominent young physician of Columbia, S. C., a member of the South Carolina Medical Association and of the Medical Society of Columbia, died at a hospital in Philadelphia, September 30, after an operation for appendicitis, aged 28.

Harper B. Lackey, M.D. Bellevue Hospital Medical College, New York, 1868, one of the oldest practitioners of Scranton, Pa., died at the Medico-Chirurgical Hospital, Philadelphia, October 1, of liver disease, on account of which he had recently undergone an operation, aged 58.

Bertram Spencer, M.D. Toronto (Ont.) University, 1881, died last week from erysipelas contracted through a street railway injury, at his home in Toronto. He was professor of medical jurisprudence in Toronto University and surgeon to the Toronto General Hospital.

John R. Diller, M.D. Jefferson Medical College, Philadelphia, 1868, died at his home in Emaus, Pa., September 29, from injuries resulting from the kick of a horse a few days before. He was about 60 years old.

Frederick C. Jackson, M.D. Starling Medical College, Columbus, Ohio, 1898, captain and assistant-surgeon, U. S. Volunteers, is reported to have died at Manila, P. I., September 30, from morphin poisoning.

Leman R. Leach, M.D. Berkshire Medical College, Pittsfield, Mass., 1848, died at his home in Hamburg, N. Y., September 27. after a decline of several months' duration, aged 82.

Clark H. Wright, M.D. State University of Iowa, Iowa City, 1896, a physician of Carlsbad, N. M., died at Hotel Dieu. El Paso, Texas, September 23, from consumption, aged 35.

John J. Barry, M.D. College of Physicians and Surgeons, Baltimore, Md., 1899, died at his home in Valley Falls, R. I., after a prolonged illness, September 26, aged 34.

J. A. Chandler, M.D. Medical College of the State of South Carolina, Charleston, 1851, died at his home near Guineys, Va., October 2, after a protracted illness, aged 74.

Henry T. Sears, M.D. College of Physicians and Surgeons, New York, 1862, died suddenly from apoplexy, while dining at the Hotel Nottingham, Boston, September 26.

Alfred N. Becker, M.D. Jefferson Medical College, Philadelphia, 1896, died at his home in Schaefferstown, Pa., from lung disease, September 20, aged 30.

Frank B. McCall, M.D. Harvey Medical College, Chicago, 1900, of Nevada, Iowa, died in the Union Hospital, Englewood, September 29, after a short illness.

Frank D. Toms, M.D. Rush Medical College, Chicago, 1887, died at his home in Keyport, N. J., September 30, from apoplexy, after an illness of one day.

James N. Prince, M.D. Memphis (Tenn.) Hospital Medical College, 1887, county clerk of Borden County, Texas, died at his home in Gail, September 21.

Edward T. Noel, M.D., a well-known citizen and capitalist of Nashville, Tenn., died at his home in that city, September 26, from heart disease, aged 55.

Moritz Neuhaus, M.D., a German physician, died at Baltimore, September 22, from cancer of the stomach, after an illness of four months, aged 57.

Wallace A. LeVan, M.D. Jefferson Medical College, Philadelphia, 1890, died in his rooms at Slatington, Pa., September 16, from tuberculosis, aged 35.

John Pace Mutchler, M.D. Jefferson Medical College, Philadelphia, 1875, died suddenly in his office in Stroudsburg, September 29.

Leander D. Tompkins, M.D. Rush Medical College, Chicago, 1852, died at his home in Cassopolis, Mich., October 1, aged 85.

Deaths Abroad.

Dr. K. E. Hasse, died at Hanover, September 19, in his 93d year. He was formerly professor of internal medicine at Zurich, and later at Göttingen, and was popular as an instructor and writer. His principal works were his manuals of diseases of the nerves, heart and respiratory organs and a volume of reminiscences. He retired from practice twenty-four years ago.

Dr. B. J. Stokvis, professor of pathology and pharmacology at Amsterdam, author of numerous works on diabetes, albuminuria, cholera and therapeutic subjects. He was born in 1834 and died last month at Amsterdam.

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

THE NEW GOSPEL OF DIRT.

Through the similarity of the names of the College of Medicine and Surgery (physiomedical) and the American College of Medicine and Surgery (eclectic), a surgeon mentioned on page 918 of The Journal, of October 11, was erroneously attributed to the physiomedical college. The authorities of that school inform us that the surgeon formerly held a professorship there, but the relationship has ceased.

PROFESSIONAL ETIQUETTE.

Altoona, Pa., Oct. 6, 1902.

To the Editor:—I take the liberty of asking two questions: 1, Drs. A. and B. are practicing in the same locality. A. leaves his patients and practice in charge of B. until A. returns. Should B. turn over all cash receipts and patients to A. on A.'s return? 2. A. has been home for some time and is called to see one of his old patrons, but not being in his office at the time and the case being an emergency one, B. was called in. As soon as A. could be secured he was again called. Whose patient was this? J. U. B.

Ans.—1. B. should retain cash, unless there is an agreement, but should turn over the patients. 2. The case belongs to A., B. being called as a substitute in an emergency.

Ashton, R. I., Oct. 7, 1902.

To the Editor:—I must protest most emphatically against your dictum (Oct. 4, page 851) that it is the duty of a physician locating in a town to call on his professional brethren already residing there. It is an unwritten law in good society that the older residents first call on the newcomer. There is no valid reason why a different usage should be observed in the case of a physician from that of any other *gentleman* unless on the theory that he is not entitled to that distinction—which the editor will scarcely contend.

N. O'D. Parks.

Ans.—The first call by the older resident applies to ladies. Men do not make formal society calls. As we said before it is an accepted custom for young physicians and for newcomers to call on older practitioners and those of longer residence in a locality. It is a mark of respect and courtesy due from the newcomer. He thus announces his arrival and his desire to be received into professional circles and friendship.

State Boards of Registration.

Ohio Standard Raised.—At the meeting of the Ohio State Board of Medical Registration and Examination on October 7, the standard of the examination for entrance to medical colleges was raised to take effect on and after July 1, 1903, as follows: Two years of the Latin language; English literature, composition and rhetoric; United States history and civics, with reference to the constitutional phases of American history; algebra through equations and plane geometry; botany or zoology; physiography or chemistry, and physics.

Student Assistants Not to Practice in Mississippi.—The attorney-general of Mississippi has given the opinion that a physician who is licensed to practice medicine under the laws of Mississippi can not take in his office an assistant to practice under his direction, unless the said assistant has himself been licensed to practice. There are numerous young medical students in the state, many of whom have been before the State Board of Health for examination and failed to pass for want of proficiency in some detail. These young students go home and study up on the branches in which they failed and then feel that they are entitled to practice without having to wait for another year. In such cases the custom has been for the student to go in the office of a licensed physician and practice medicine ostensibly as the assistant of such physician. Doctors who have a great rush of business find such assistance very convenient, but hereafter they must forego this luxury.

Oregon Report.—Dr. Byron E. Miller, secretary of the Board of Medical Examiners of the State of Oregon, reports the examination held at Portland, July 8, as follows: Number of subjects examined in, 9; questions, 90; percentage required to pass, 75; written examination; examined, 24; passed, 21; failed, 3.

PASSED.

Sch. of Pract.	College.	Year Grad.	Per-Cent.
R.	Beaumont Hospital Medical College, St. Louis	1896	80.7
R.	College of Physicians and Surgeons, Chicago	1902	80.9
R.	College of Physicians and Surgeons, Chicago	1902	85.8
R.	College of Physicians and Surgeons, Chicago	1902	80.3
R.	College of Physicians and Surgeons, Chicago	1902	83.3
R.	College of Physicians and Surgeons, Chicago	1901	86.3
H.	Chicago Homeopathic Medical College	1901	81.7
H.	Chicago Homeopathic Medical College	1895	80.4
E.	Eclectic Medical Institute, Cincinnati	1870	67.5
E.	Eclectic Medical Institute, Cincinnati	1902	83.5
H.	Hahnemann Medical College, Chicago	1882	67.5
R.	Medical College of Ohio, Cincinnati	1883	75.7
R.	McGill University, Montreal	1899	88.3
R.	Rush Medical College, Chicago	1901	81.9
R.	Tennessee Medical College, Knoxville	1897	76.9
R.	Toronto University	1902	86.3
R.	University of Pennsylvania, Philadelphia	1870	74.1
R.	University of Southern California	1902	81.1
R.	Vanderbilt University, Nashville	1902	84.5
R.	Western Reserve Univ. Med. Coll., Cleveland	1882	79.8
R.	Willamette University, Salem, Ore	1900	81.9

FAILED.

R.	Medico-Chirurgical College, Kansas City	1900	52.5
R.	Rush Medical College, Chicago	1891	72.2
H.	Univ. of Mich. Homeo. Med. Coll., Ann Arbor	1902	68.4

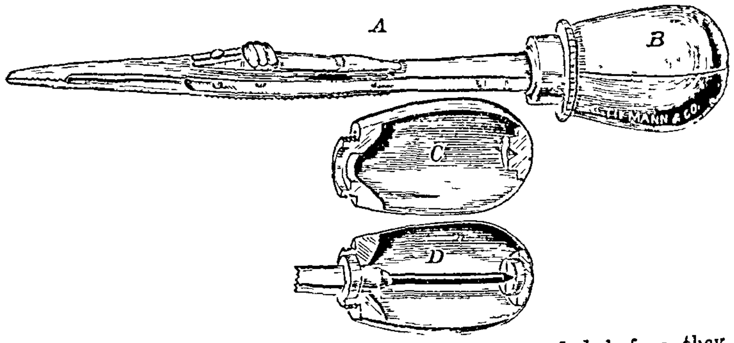
New Instrument.

A ROTATING TORSION HEMOSTATIC CLAMP.

JOHN JOSEPH NUTT, M.D.

NEW YORK CITY.

A number of torsion forceps have been devised, but of all those seen by the writer, none has fully met the requirements of simplicity in construction and facility in use. Some are so complicated that considerable practice is needed before they can be skilfully manipulated and they have so many parts that great care is needed to keep them in perfect working order. Others, though very cleverly made and showing some ingenuity upon the part of the inventors, need both hands to be applied, and that alone is a sufficient drawback to prevent their being of great service.



Torsion, as practiced by many surgeons with the ordinary hemostatic clamp, is at the best an uncertain operation. If applied with one hand the danger is imminent of tearing the coats of the vessel at some point beyond the bite of the forceps, on account of the unsteadiness of the instrument, and if applied with both hands—one to steady the instrument and one to twist—the operation is immediately robbed of one of the advantages of torsion, that of saving time.

The instrument herewith presented has thus far proved all the writer anticipated. It is practically a Fricke-Amussat clamp pivoted so as to rotate in a handle. The illustration shows the jaws with the slide-catch, A, and the olive-shaped handle, B. The handle is made in two parts so as to permit of easy and thorough cleansing. D shows how the pivot from the jaws is held in perfectly ground bearings at the collar and top of the handle. C illustrates how the halves of the handle appear when the jaws are removed.

This handle is carefully made to fit snugly and comfortably into the palm of the hand, where it is retained, in the most natural way, between the ball of the thumb and the little and ring fingers. Thus the thumb and forefinger are free to grasp the bleeding-point, fasten with sliding catch, twist and set free. There is no halting or hesitancy in the revolving motion, and the firmness of grasp guarantees perfect control and steadiness. The vessel is accurately seized and twisted without any side-to-side motion and danger of rupturing.

The advantage of torsion over ligation may be summed up as:

1. The saving of time; ligation of the smaller arteries becomes entirely unnecessary.

2. The less danger of infection; every ligation is an added possibility to infection.

3. A clear field of operation; torsion applied, the clamp is immediately removed and not left to interfere with the progress of the surgeon.

107 West Seventy-fourth Street.

Association News.

Rush Monument Fund.—The report of the Committee on the Rush Monument Fund was called for at the first meeting of the House of Delegates at the Saratoga session of the American Medical Association, but no one representing the committee being present it was passed and inadvertently not called for later. The following report from the treasurer has been sent in for publication:

HENRY D. HOLTON, TREASURER, IN ACCOUNT WITH RUSH MONUMENT FUND.

1901.		
January 1—To cash on hand		DR.
	To dividends on bond and mortgage	$741.88
	To cash for Dr. Ellis Phillips: By L. M. Gates, for Lackawanna Co. Med. Soc.	597.00
	To cash for Dr J. S. Rea	1.00
		1.00
		$1,340.88
1901.		
November 22—By paid for N. P. and Great Northern Joint Bond		CR.
	By expenses	$1,000.00
1902.		121.53
May 31—By cash on hand		
		219.35
		$1,340.88

AMOUNT OF FUND JUNE 1, 1902.

Funds invested in bonds and mortgages, all of which can be turned to cash any day	
Cash on hand	$12,200.00
	219.35
	$12,419.35

There should be added to the amount given by the treasurer the sum of $2000 held by the Medical Society of the State of Pennsylvania, which society is ready to turn over this amount, with interest, as we understand it, as soon as we are ready to erect the monument.

Rules Governing Senn Medal Competition.

The Committee on the Senn Medal beg leave to call attention to the following conditions governing the competition for this medal for 1903:

1. A gold medal of suitable design is to be conferred on the member of the American Medical Association who shall present the best essay on some surgical subject.

2. This medal will be known as the Nicholas Senn Prize Medal.

3. The award will be made under the following conditions: (*a*) The name of the author of each competing essay shall be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. (*b*) All successful essays become the property of the Association. (*c*) The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the Association. (*d*) The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association. (*e*) The competition for the medal will be closed three months before the next annual meeting of the American Medical Association, and no essays will be received after March 1, 1903.

Communications may be addressed to any member of the Committee, which consists of the following: Dr. James H. Dunn, chairman, Minneapolis; Dr. M. L. Harris, 100 State St., Chicago; Dr. Floyd W. McRae, Atlanta, Ga.

Physical Diagnosis as Related to Dental College Curricula.

Dr. Cassius C. Rogers has deposited with us duly attested affidavits and manuscripts concerning the authorship of the address or lecture on "Physical Diagnosis as Related to Dental College Curricula" (published in The Journal of June 21, 1902, and further mentioned July 5, page 30, and July 26, page 209). These affidavits are abstracted below, as we promised to give each side a chance to reply. Copies of the affidavits were submitted to Dr. A. H. Peck for any reply he might see fit to make, and his reply is that he denies several of the allegations, but that, having commenced suit against Dr. Rogers, he does not wish to submit any further evidence here. The matter is now closed as far as The Journal is concerned.

THE FURTHER STATEMENT FROM DR. ROGERS.

The first affidavit is by Dr. Rogers himself, and states that during the year 1901-2 he delivered a series of lectures before the Chicago College of Dental Surgery, and that on Oct. 16, 1901, he delivered the lecture before the college on the subject of "Physical Diagnosis as Related to Dental College Curricula," which was taken down in shorthand, and afterward typewritten and mimeograph copies taken. To this affidavit are attached a pencil-written manuscript and a typewritten manuscript which the affidavit declares respectively to be the original notes in the preparation of the lecture and the typewritten copy with interlineations from which the lecture is alleged to have been delivered. The affiant then states that at the time of the delivery of this lecture he had never heard of the lecture delivered or claimed to have been delivered by Dr. A. H. Peck, and that the first he knew of the address was its publication in The Journal.

The second affidavit is by the stenographer, and is a repetition of the affidavit mentioned in our issue of July 5, and further states that on or about Jan. 22, 1902, Dr. A. H. Peck asked her for a copy of all the lectures delivered by Dr. Rogers during the said course of lectures, and that she accordingly delivered to him the said copies in the first week of May, 1902, and received his check in payment.

The third affidavit is by J. B. Paine, of 805 Tacoma Building, Chicago, an attorney, who states that he has examined the records of the Northwestern University Dental School; that he has gone over the volume of lectures delivered before the students of said school in the session of 1899-1900 by Dr. Peck; that he was informed by the officers of said school that the said volume was bound several months after the close of the school year, and was intended to include all the lectures delivered by Dr. Peck during that year, and that he found that this copy did not contain any lecture on the subject of "Physical Diagnosis as Related to Dental College Curricula" or any similar subject.

The fourth affidavit is by Dr. Wm. C. McDonough, who says that on or about June 23, 1902, he went to the office of Dr. A. H. Peck with Dr. C. C. Rogers, at which time Dr. Rogers asked Dr. Peck where he had obtained the article *in question*, to which Dr. Peck replied that he had written it himself. The affiant further states that thereon Dr. Rogers produced the lecture delivered before the Chicago College of Dental Surgery, Oct. 16, 1901, and that at that time Dr. Peck stated that when he prepared his address as published in The Journal he had never heard or seen the lecture as delivered by Dr. Rogers. The affiant further states that Dr. Peck at that time stated that he had had his address prepared for two years, but had not before made it public and said nothing then of having delivered it in April, 1900.

New Members.

The following is a list of new members for the month of September, 1902:

ARKANSAS.
Ellis, J. B., Helena.

CALIFORNIA.
Beede, W. M. F., Stockton.

FLORIDA.
Helms, J. P., Tampa.
Pierpont, J. Harris, Pensacola.
Perry, P. C., Jacksonville.

GEORGIA.
Hardin, R. M., Rome.

ILLINOIS.
Horner, C. P., Tampico.
Oliver, E. W., Winona.
Ferguson, H. M., Morris.
Newell, S. C., Larchland.
Yoder, H. L., Morton.
Shamel, J. Y., Gibson City.
Ziliak, A. L., Olney.
Cuthbertson, H. A., Chicago.
Hess, J. H., Chicago.
Patton, D. H. R., Chicago.
Trapp, A. R., Peoria.
MacKenzie, W. W., Chicago.
Jacobs, R. H., Samoth.
Gordon, R. E., El Paso.

INDIANA.
Dancer, C. R., Ft. Wayne.
Thomas, C. E., Leesburg.
Willeford, Geo. W., Washington.
Detamore, J. E., Union City.

INDIAN TERRITORY.
Hailey, W. P., Wilburton.
Horine, W. H., Haileyville.
Sames, W. W., Gowen.
McClure, Bartony, Witteville.

LOUISIANA.
Gaster, L. D. S., New Orleans.
Levy, J., New Orleans.
McGehee, E. L., New Orleans.
Ryan, J. J., New Orleans.
Kiblinger, E., Avayelles Parish, Plancheville.
Hanson, T. H., Donaldsonville.
Butler, T. M., Summerville.
Toler, E. McL., Woodland.
Stark, Tl [illegible]
Landry, [illegible] Parish, [illegible]

MAINE.
Gehring, J. G., Bethel.

MARYLAND.
Brock, C. E., Baltimore.

MASSACHUSETTS.
Lithgow, R. A. Douglas, Beverly.
Upton, C. L., Shelburne Falls.
Cutler, C. N., Chelsea.

MICHIGAN.
Wilson, S. J., Detroit.
Whinery, J. B., Grand Rapids.
James, W. B., Eloise.
Wade, G. B., Laingsburg.

MINNESOTA.
Wiedow, Henry, Round Lake.

MISSISSIPPI.
Champenois, Cecil, Meridian.

MISSOURI.
Duncan, J. H., St. Louis.
Carthrae, Lewis, Corder.

MONTANA.
Sievers, J. R. E., Butte.

NEBRASKA.
Bellwood, W. S., Alliance.

NEW JERSEY.
Devlin, Frank, Newark.
Guion, Edward, Atlantic City.
Tattersall, J., Paterson.
Rogers, Geo. A., Newark.
Parker, G. H., Trenton.
Craythorn, C. J., Trenton.

NEW 'YORK.
Scott, G. T., Davenport.
Lusk, W. C., New York City.

NORTH CAROLINA.
Tayloe, D. T., Washington.

OHIO.
Weaver, W. B., Cincinnati.
Tunison, I. F., Cincinnati.
Schmidter, W. C., Cincinnati.
Schenck, W. E., Cincinnati.
Holst, E. B., Rossford.

OREGON.
White, C. S., Gervais.

PENNSYLVANIA.
Skinner, J. O., Chambersburg.
Meredith, C. C., Pittsburg.
Dorworth, E. S., Bellefonte.
Atlee, J. L., Lancaster.

SOUTH DAKOTA.
Hanson, H. P., Beresford.

TENNESSEE.
Van Meter, L. M., Memphis.

TEXAS.
Loving, R. S., Ft. Worth.
Hix, R. W., Vernon.

WASHINGTON.
McNerthney, J. B., Tacoma.

WEST VIRGINIA.
Deyerle, J. H., Harding.

WISCONSIN.
O'Malley, P. H., Madison.
Williams, W. E., Cambria.
Bair, F. M., Benton.

Societies.

COMING MEETINGS.

New York State Medical Association, New York City, Oct. 20-23, 1902.

Conference State and Provincial Boards of Health of North America, New Haven, Conn., Oct. 28-29, 1902.

Oklahoma Territory Medical Association, Guthrie, Nov. 11, 1902.

Southern Surgical and Gynecological Association, Cincinnati, Nov. 12-14, 1902.

Miami Valley (Ohio) Medical Society.—This society held its twenty-fifth anniversary meeting at Loveland, October 13 and 14.

Roswell Park Medical Club, Buffalo.—This club has elected officers for the ensuing year as follows: President, Dr. Julius H. Potter; vice-president, Dr. William C. L. Meisberger, and secretary and treasurer, Dr. George F. Cott.

Mower County (Minn.) Medical Society.—This society was organized *at Austin, October 3, with Dr.* William L. Hollister, Austin, president; Dr. Willis F. Cobb, Lyle, vice-president; Dr. Christian A. Hegge, Austin, secretary, and Dr. George J. Schottler, Dexter, treasurer.

Boulder County (Colo.) Medical Society.—This society met October 4. In addition to the scientific *program steps* were taken to secure a permanent home for a library and medical reading room for the society and visiting physicians. A committee *on legislation* was appointed, and also a committee on public health.

Brown County (Minn.) Medical Society.—After lying dormant for nearly seven years, this society is about to be reorganized in accordance with the suggestions of the American Medical Association. At a meeting held in New Ulm, September 6, presided over by Dr. Jacob W. B. Wellcome, Sr., Sleepy Eye, it was decided to call a meeting, reorganize and elect officers.

New York State Medical Association.—The annual meeting of this association will be held at the New York Academy of Medicine Building, New York City, October 20 to 23. The program is a most interesting one, including a symposium on colds, one on typhoid fever, one on pneumonia, and one on Roentgen rays. Among the guests from other states invited to present papers are Drs. William J. Mayo, Rochester, Minn.; Albert J. Ochsner, *Chicago;* W. S. Thayer, *Baltimore, and* Alfred Stengel, Philadelphia.

Conference of State and Provisional Boards of Health of North America.—The seventeenth annual conference will be held at New Haven, Conn., October 28 and 29, under the presidency of Dr. H. M. Bracken of Minnesota. This conference has for its object the assembling from time to time of a body of executive sanitary officers to exchange opinions and *consider questions relating to the practical administration of* public hygiene. This assembly differs from the American Public Health Association in devoting its attention exclusively to subjects which are of direct interest to the executive officer of a health department, and in endeavoring to answer the questions which arise daily to every health officer as to the practical application of accepted truths of sanitary science. Its membership includes thirty-five boards of health.

International Convention for the Unification of Heroic Remedies.—This convention was held in Brussels, Belgium, September 15. The object of the convention was to devise means of regulating poisonous preparations, to secure a uniform percentage of strength in heroic remedies. There were nineteen governments represented, each sending a physician and a chemist. Dr. Frederick B. Powers, formerly professor of chemistry at the Wisconsin University, but now a resident of London, England, was the United States chemist, and Dr. Horatio C. Wood, Philadelphia, the physician. It was a very harmonious meeting, and an agreement was reached establishing *a standard of strength for* these drugs—all tinctures to be 10 per cent. It was decided that the Belgian government should ask all the nations represented to carry out this agreement. In most countries—*the United States and* Great Britain being the exceptions—the sale of drugs is regulated by law, and the change can be readily made by such governments.

American Academy of Railway Surgeons.—The ninth annual meeting of this association was held in Kansas City, *Mo., October* 2 and 3. The president, Dr. August F. Jonas, Omaha, chief surgeon of the Union Pacific Railway, delivered the annual address on the subject of "Negligence." The papers presented dealt *chiefly* with the responsibility of railway companies, medical experts, surgery and hygiene, and a symposium on "The Surgical Organization of the Railway Service," which included papers and a general *discussion of the surgical* and hospital systems of railways. The local members of the academy entertained the members at a banquet at the Midland, over which Dr. August F. Jonas, Omaha, *presided as* toastmaster. The election of officers resulted as follows: President, Dr. Luther Sexton, New Orleans, Illinois Central; vice-presidents, Drs. Arthur L. Wright, Carroll, Iowa, *Chicago Great* Western, and John W. Perkins, Kansas City, Mo., Union Pacific and Santa Fe; secretary and treasurer, Dr. Thomas B. Lacey, Council Bluffs, Iowa, Wabash, Illinois Central and Chicago and Northwestern, and editor, Dr. R. Harvey Reed, Rock Springs, Wyo., Union Pacific.

International Congress for Care of the Insane.—The resolutions voted by this congress which met at Antwerp in September, favored the "family colony" for suitable cases as the most natural, the freest, the best and the most inexpensive manner of caring for the indigent insane, while at the same time it constitutes an important factor in the treatment. It can be an annex feature of any institution in charge of a psychiatrist, but the ideal is the foundation of central establishments in suitable country localities to serve as nuclei for the foundation of the family colonies. These colonies do not encroach on the existing establishments as they are adapted only for a restricted number of insane patients, but they solve the problem of the overcrowding of these establishments, and in a practical, active and inexpensive manner. The delegates were unanimously in favor of organizing an asylum-school for idiot and imbecile children in the family colonies, and of increasing the number of physicians in asylums and relieving the overworked attendants. They also favored the organization of a surgical service in such institutions. The congress adjourned to meet in 1904 at Edinburgh.

Second International Congress of Electrology.—Among the communications presented at this congress, which closed its sessions at Berne, September 6, some proclaimed the advantages of electric treatment of eczema and certain other skin affections, of constipation, gastralgia, exophthalmic goiter and pulmonary tuberculosis. Fort of Paris advocated electrolysis for strictures of the esophagus and mitral valve, and Chatzky of Moscow lauded the continuous current for acute inflammations. The addresses were on "Electro-Diagnosis"; "Surgical Electrolysis"; "Radiology and Radiography of Internal Organs"; "Accidents from the X-Rays" by Oudin of Paris, and "Dangers of Industrial Electric Currents." An exhibition of electric appliances was an important feature of the congress, as were also Kronecker's electric experiments at his Institute of Physiology. Narcosis was induced in a dog with the interrupted current, placing the cathode on the skull and the anode over the kidneys. In another animal the heart was arrested with a current of 240 volts, and then started to beating again with the same current after opening the thoracic cavity. The next congress will be held at Amsterdam in 1905.

Vermont Society for the Study and Prevention of Tuberculosis.—This society was organized at Burlington, September 28, by a number of physicians and laymen from the different parts of the state. A constitution was adopted, and various phases of tuberculosis were discussed. Officers were elected as follows: President, Hon. E. C. Smith, St. Albans; vice-presidents, Drs. Don D. Grout, Waterbury, and Charles W. Peck, Brandon; secretary, Dr. H. Edwin Lewis, Burlington, and treasurer, H. L. Stilson, Bennington. The following resolutions were adopted:

> WHEREAS, The widespread occurrence of tuberculosis in any community presents problems which in the highest interests of humanity, charity and the public welfare should engage the attention of all thinking people; and
>
> WHEREAS, Tuberculosis, a disease that scientific study has shown to be preventable and curable to a marked extent, is responsible for more suffering and deaths in Vermont than all other transmissible diseases combined, and
>
> WHEREAS, It has been amply demonstrated that the arrest and cure of tuberculosis can be best accomplished in properly arranged and controlled sanitaria,
>
> *Therefore, Be It Resolved*, That we, the Vermont Society for the Study and Prevention of Tuberculosis, do hereby earnestly urge and recommend the establishment of a state sanitarium in Vermont for the proper care of consumptives; and
>
> *Furthermore, Be It Resolved*, That the committee on legislation of this society should present the matter for the consideration of the assembly of 1902, and use every legitimate means to insure the passage of a bill providing for the establishment of a Vermont sanitarium for state consumptives. Also these resolutions:
>
> WHEREAS, It is the consensus of scientific opinion that bovine tuberculosis is a real menace to public health; and
>
> WHEREAS, The efforts of the Vermont board of agriculture and cattle commission to eradicate tuberculosis from Vermont cattle have been attacked and severely criticised;
>
> *Therefore, Be It Resolved*, That we, the Vermont Society for the Study and Prevention of Tuberculosis do express our appreciation of the honest and painstaking work of the Vermont cattle commission;
>
> *Resolved*, That whatever modifications may be made in the present laws relative to bovine tuberculosis we earnestly protest against the removal or relaxation of any measures which tend to lessen or eradicate bovine tuberculosis.

International Congress of Gynecology.—The fourth congress convened at Rome, September 15, with more than 450 members registered, including 20 from the United States, 57 from France and 7 from England. The membership of the largest previous congress was 316. In the addresses on "Medical Indications for Induction of Labor," Simpson asserted that the habitual death of the fetus at a certain month is an indication for intervention before this date. He, with others, included tuberculosis, uncontrollable vomiting, certain cases of hemorrhage and the nephritis of pregnancy among the indications whenever the prognosis of the pre-existing or intercurrent disease is rendered more serious by the pregnancy, or the pregnancy is doomed on account of them. Schauta stated that 95 per cent. of women with heart disease can go through a pregnancy without much trouble. In case of mitral stenosis, however, he advocates interruption at the first sign of disturbance of compensation, and also in rapidly progressive tuberculosis, especially the laryngeal form. Hofmeier thinks that chronic nephritis entails such disturbances that the fetus is lost when ordinary treatment fails to relieve, and consequently he advises induction of labor at any period, although there is very little danger of eclampsia. This danger is great, on the other hand, in case of the nephritis of pregnancy, and this also indicates termination of the pregnancy, while acute nephritis is not an indication for it, and is not influenced by it. Rein advocates intervention in case of nephritis and in heart disease, and reports 11 women thus treated and all cured, while 7 of the children were saved. He has induced labor 41 times in 2690 obstetric cases, while Pinard's list is 20 times in 22,708 cases in the last ten years, with 15 recoveries. Among other subjects discussed were "Hysterectomy in the Treatment of Puerperal Infection"; "Tuberculosis of the Female Genitalia" and "Surgical Treatment of Cancer of the Uterus." *Cullen* of Baltimore was invited to deliver an address on the latter subject. The program was carried out as announced in THE JOURNAL of September 13, p. 639. Among the Americans present were Drs. Mann, Engelmann, Kelly, Jewett, Cullen, Wakefield, Barton, and the late Dr. John Byrne, with Brennan of Montreal. On invitation of the Russian government, St. Petersburg was selected as the meeting place of the next congress.

MEDICAL SOCIETY OF VIRGINIA.

Thirty-third Annual Meeting, held in Newport News, Sept. 23, 24 and 25, 1902.

The President, Dr. Richard S. Martin, Stuart, in the Chair.

Welcome.

DR. JOHN W. AYLER, Norfolk, welcomed the society on behalf of the profession of Newport News, and referred to the courage and spirit of the Virginia physicians, welcoming the older ones as the fathers of the Medical Society of Virginia and bidding the younger men welcome and Godspeed in their efforts to relieve suffering humanity.

DR. ROBERT LEE PAYNE, Norfolk, in his address to the public, informed the assembly of the aims and objects of the society.

President's Address.

The President characterized his address as "A plain talk on some of the benefits to be derived by thorough organization of the medical society, both to the laity and the profession, with mention of the most prevalent causes of sickness, race decay and their prevention." He asked whether the medical profession had attained that high and noble position to which it was entitled, discussed this matter at length and referred to the vast progress made in medicine in the last twenty years. He urged that young men seeking to enter the profession should possess a better preliminary education; that there should be an entrance examination on educational qualifications entirely distinct from the medical examination; and that the laws should be so amended as to drive from the state cancer doctors, osteopaths, Eddyites, and all other forms of quacks. He held that there should be a complete and thorough reorganization of the society, as in Virginia only one in ten physicians belong to the American Medical Association, and only about one in three or four are affiliated with the state and county societies. Every county in the state should have a medical society organized under the plan suggested by the American Medical Association. By organization medical laws could be enforced and the state can be freed from irregular practitioners and quacks only when each county has a committee whose duty it shall be to see that the medical laws in its own district are enforced. He then spoke of the harm done in the profession by reason of petty jealousies and of the necessity of obtaining better medical laws and of the repeal of obnoxious and dangerous legislation. He next discussed at length the prevalent causes of sickness, and race degeneration, including expectoration, bad ventilation, the cigarette, drug and alcohol habits and also decried patent medicines, commended pure food laws and mentioned the treatment of smallpox, vaccination, the evils of unhygienic dress and the follies of mothers.

Colored Physicians Not Admitted.

Two organizations of colored physicians, the Old Dominion Medical Association and the Tidewater Medical Association, presented petitions asking recognition and admission to the Medical Society of Virginia, and a committee was appointed consisting of Drs. W. L. Robinson, George Ben Johnston and J. L. Shackleford, to report on this petition. After considerable discussion, the petitions were rejected by a vote of 52 to 23.

An excellent series of scientific papers was given and discussed.

Reorganization Proposed.

Dr. Charles Grandy presented a paper on "Organization of the American Medical Association," and proposed a plan for reorganization of the state and county societies, which was referred to a committee of five to report on at the next meeting.

Election of Officers.

At the afternoon session, September 25, the following officers were elected for the year: President, Dr. John N. Upshur, Richmond; vice-presidents, Drs. William F. Cooper, Newport News, Richard W. Sanders, Max Meadows, and Junius F. Lynch, Norfolk; recording secretary, Dr. Landon B. Edwards, Richmond; corresponding secretary, Dr. John F. Winn, Richmond, and treasurer, Dr. Richard T. Styll, Newport News. Dr. Clifton M. Miller, Richmond, was elected to fill Dr. Upshur's place on the executive committee and Dr. William S. Christian, Urbanna, was elected to deliver the annual address. Roanoke was selected as the place of meeting for 1903. Drs. Stuart McGuire, Richmond, and Richard S. Martin, Stuart, were elected delegates to the American Medical Association.

Banquet.

The meeting of the society closed with an elaborate banquet at the Hotel Chamberlain, Old Point Comfort. Covers were laid for 300. Dr. William F. Cooper, president of the Newport News Medical Society, officiated as toastmaster, and Drs. John N. Upshur, Richmond, Edwin Ricketts, Cincinnati, Hugh T. Nelson, Charlottesville, Elliott T. Brady, Abingdon, J. Wilton Hope, Hampton, and J. Allison Hodges, Richmond, and Messrs. W. F. Johnson and A. A. Moss, responded to toasts.

CHICAGO MEDICAL SOCIETY.

Regular Meetings, held October 1 and 8, 1902.

The President, Dr. William A. Evans, in the Chair.

October 1.

The Typhoid Fever Situation in Chicago.

Dr. Arthur R. Reynolds read a paper with this title. He said that the one supreme measure necessary to prevent recurrences of epidemics of this disease is the protection of the water supply from sewage pollution.

While the laboratory investigations have been unable to demonstrate typhoid-infected milk during the present epidemic, the presence of the typho-colon group has been repeatedly detected. Although special search has been frequently made for the typhoid bacillus in the city milk during the last eight years, it has been found in only three instances, and those in local epidemics, where the relation of cases of the disease and a common milk supply was clearly established.

The practical point with reference to the sanitary quality of the city water supply is that low lake levels cause increased pollution; high lake levels improve the sanitary quality, and neither the one nor the other will be perceptibly affected by "the abstraction of from 300,000 to 600,000 cubic feet per minute" through the drainage canal. The abstraction of double the maximum quantity would not be seriously felt, and it is to be hoped in the sanitary interest, not only of Chicago, but of all points between Chicago and New Orleans, that this flow will some day be secured.

The Etiology of Typhoid Fever.

Dr. Wm. K. Jaques read this paper. A constant stream of pathogenic germs is passing through the intestinal tract. To prevent the invasion of these into the tissues there must be present the destructive fluids and resisting powers of the intestinal cells. The greater the virulence of the germ the greater must be the resistance to prevent invasion. The transmission of the typhoid bacillus from the intestinal or urinal tract of the diseased into the alimentary tract of a susceptible individual is necessary to produce typhoid fever. The key to typhoid sanitation is the prevention of the contamination of food and water by human dejecta.

The Occurrence of Typhoid Bacilli in the Urine During Typhoid Fever.

Dr. Adolph Gehrmann followed with a paper on the results of investigations covering 71 specimens of urine from 68 typhoid patients in the Cook County Hospital. None of these were specially selected, except in so far as it was positively recognized that typhoid was present. No attempt was made to show at what stage during the sickness the bacillus may appear in the urine or to study the conditions that may be incident thereto. The report is preliminary in that there has not been opportunity to study the histories of these cases and add the clinical to the bacteriologic data. The urine was collected in large sterile test tubes, without any special antiseptic precautions. The tubes were filled early in the morning and the cultures from them were started before noon, an average time of four to six hours intervening. The method employed was to spread loopfuls of the specimen over inclined agar and incubate the cultures for twenty-four hours. Colonies were thus at once obtained, and these were examined for the presence of motile bacilli. Transplantations from the suspected colonies were then made and the resulting pure culture was carried through on gelatin agar, glucose agar, litmus, milk and bouillon for differentiation. A test with positive reacting typhoid blood was then made to verify the results. In a few instances the specimens were immediately centrifuged, and the sediment examined by direct microscopic preparation. When large numbers of motile bacilli are found in specimens so treated, one may almost rest assured that typhoid bacillus is present. From the 71 specimens the typhoid bacillus was isolated 15 times, giving a percentage of 21 per cent. positive results. In 12 specimens *Bacillus coli communis* was found; in 6, pus cocci; in 31, saprophytes, more or less numerous, and 20 specimens were sterile. The typhoid and colon bacillus were found mixed in 3 of the cases. As regards cloudiness of the urine and the presence of typhoid bacilli, he found the bacillus in 9 cases of cloudy urine among the 15 positive specimens.

Typhoid Bacilli in the Blood.

Drs. E. K. Kerr and F. G. Harris read a joint paper on the subject. The situation was reviewed from the time of the discovery of the bacillus down. The technic of examination by culture and agglutination was given in detail.

In the author's list of 56 cases, 31 were positive and 25 negative. In a series of 102 cases with 118 examinations compiled from recent writers, the bacilli were found in the first week in 87.5 per cent.; second, 70 per cent.; third, 50 per cent.; and later 25 per cent. In the 6 relapses examined they were found in every case. The general average is 70 per cent Cultures were positive before the Widal test was obtained in 37 per cent. of 81 cases when this relation was reported. It was shown that the bacilli are comparatively few. The practical application lies in the easy method of isolating the bacillus, and in the diagnostic aid thus offered, which is sure, early in appearance, and fairly easy, at least in hospital cases.

October 8.

Ninety Cases of Typhoid Fever in Infants and Children.

Dr. Isaac A. Abt stated that a large proportion of the cases ran the entire course of the disease without receiving any drugs. Patients were kept in bed and, as near as possible, absolutely quiet. They were encouraged to change their position in bed frequently. This enforced rest in bed could not be strictly adhered to in young children. It was necessary to pick them up on account of restlessness, or to change their napkins, and for their baths. The mouths were kept scrupulously clean by washing with boric acid solution. The usual precautions concerning the prevention of bed-sores by rubbing the back with alcohol was practiced. During the febrile period the patients were kept on a liquid diet, consisting almost exclusively of milk, except in those rare cases where milk could not be borne. After the temperature had fallen to normal, strained gruels, broths and fruit juices were permitted. The patients were all encouraged to drink large quantities of water. No solid food was allowed until the tenth day of normal temperature.

The treatment of the temperature was hydrotherapeutic. A temperature above 102 degrees was treated by tepid sponging; if the temperature rose still higher and was not reduced by the sponging, the patient was placed in a cold pack. In those cases where the fever was not controlled by either of the foregoing, the patient was given a cold bath. He was placed in a comfortable, warm bath of about 90 F. This was gradually reduced to 80 F. He found it rarely necessary to reduce the temperature of the bath much below this point. At times, however, where the fever did not yield, the bath temperature was reduced to 70 or 75 F. No antipyretic drugs were employed to reduce the temperature in any case. In those cases showing nervousness or restlessness, an ice-bag applied to the head sometimes gave relief. At times a small dose of Dover's powder or sodium bromid was given for restlessness and sleeplessness. Constipation was treated by enemata, and cases of severe diarrhea were given small doses of deodorized tincture of opium. In the prolonged cases, which showed the exhausting effects of the disease, where the pulse was rapid and weak, whiskey or brandy was employed, and moderate doses of strychnia were given. A child ten years of age was given 1/100 of a grain of strychnia three or four times a day. A child three years of age was given 1/200 of a grain three or four times a day. Intestinal antiseptics were rarely employed. Complications were treated, as they arose, on a rational plan. At the close of the febrile period, patients were frequently given a tonic in a routine way, the favorite being the elixir of iron, quinin and strychnia.

The Dietetic Management of Typhoid Fever.

DR. FRANK X. WALLS followed with a paper on this subject. He paid particular attention to "milk alone," saying that it was objectionable as a typhoid diet: 1. Because it is intolerable as a sole food for the adult in health or disease. 2. It contains a large amount of poisonous filth. 3. In digestive tract infections it feeds the parasitic intestinal flora rather than the host. 4. The systematic intoxication from milk poisoning is serious and often fatal. 5. We have abundant other substances that are without these objectionable features, and more palatable, equally abundant, very nutritious, easily digested and readily assimilated.

Successful treatment depends in a large measure on the attention that is given to the diet. The keynote of the dietetic management is individualization. Water should be given freely, plain or charged. Gruels, well cooked and seasoned, strained and malted, if preferred, made from oatmeal, rice, barley, arrowroot or other cereals, have a moderate nutritive value. Meat broths or soups, of beef, mutton or chicken have a slight nutritive but more stimulant value. Meat juice, made by the cold method, contains from 7 to 9 per cent. of proteid, and is a good food, and from 5 to 15 ounces may be given a day. White of egg added to water, gruels or soup enriches them. The yolk of the egg is very rich in fat, and beaten in with cereals, it makes a very palatable, nutritious food. Jellies, calf's foot or fruit, are a delicate addition. Fruit juices, of orange, grape, berries, lemon or pineapple are tonic beverages that break the monotony of the sameness of a typhoid diet. Cream and milk, but the best only, may be given very cautiously with other foods; given plain, or flavored with malt, coffee, chocolate, etc., acidulated, peptonized, pancreatinized. Koumyss, buttermilk, and junket are nutritious milk foods. This list is merely suggestive, and may be as varied as the needs of the individual require. The concentrated foods are rarely required, though somatose, tropon, plasmon, plasmon coca or condensed milk are at times of service. Patients should not be overfed. The physician should watch the abdomen for gaseous distention of the bowel, and the stools for evidence of indigestion or food putrefaction. If present, correct the diet rather than administer antiseptic or anti-fermentative remedies. Alcohol may be used according to the particular indications in the specific case.

Hydrotherapeutic Treatment of Typhoid Fever.

DR. HENRY B. FAVILL spoke on this subject. The statistics in favor of the bath treatment are favorable as compared with other forms of treatment. He referred to the typical, original Brand bath, which he defined as the vigorous rubbing and manipulation of the typhoid patient, well immersed in water of a temperature varying from 60 degrees to 80 degrees. The manipulation of the bath is an essential part of the process; the temperature is subject to variation. Although the antipyretic value of the bath is important, he considers it a mistake to centralize attention on its antipyretic effects. Its effect on the patient is sedative and tonic. A patient who is subjected to an intelligent administration of a cold bath in typhoid, typically and regularly, shows marked sedative effects, as manifested, first, by a feeling of comfort, as against a previous feeling of malaise; second, as manifested by a tendency to sleep, as contrasted with previous restlessness and inability to sleep. The second phase of the bath was its tonic effect, as manifested by an improvement in the cerebral condition, a condition of clearness of mind as against hebetude; of alertness as against indifference; of comfort, physical and psychical, as against distress. This was a fair index of improved tone. As to the digestive tract, there was typically a better digestion, as evidenced by the decidedly less typhoid character of the tongue, and by a less tendency to meteorism.

Surgical Treatment of Hemorrhagic Pachymeningitis.

DR. JOHN C. MUNRO of Boston read this paper (by invitation). His conclusions were that: 1, alcohol, syphilis, acute and wasting diseases and trauma apparently bear some causative relation. 2. The symptoms are those of diffuse subdural hemorrhage coming on slowly, producing mental irritation, spasm and rigidity of the extremities, convulsions, and later on paralysis, the sequence being more or less irregular. The treatment is surgical, and should be instituted as early in the disease as possible. Without operative relief, in cases where pressure symptoms manifest themselves, the prognosis is practically hopeless. Early operation gives the best chance for recovery.

DISCUSSION.

DR. A. J. OCHSNER said a difficulty which surgeons encountered in connection with hemorrhagic pachymeningitis was the lack of history. They came as hopeless cases, frequently in a comatose condition, and it was often difficult to say whether they were intoxicated, under the influence of a drug, or whether they were in the last stages of uremia. He had operated on a number of such cases, and, with two exceptions, all with fatal results. In one case, aside from a hemorrhagic pachymeningitis, the patient suffered from a cerebral hemorrhage. After the subdural clot was removed, symptoms of pressure persisted. Autopsy showed a large clot, the result of a cerebral hemorrhage.

DR. E. WYLLYS ANDREWS thought that spinal puncture would be a valuable aid in some of these cases. He had not tried it, but he believed it would furnish some information.

DR. ARCHIBALD CHURCH said that a sharp differentiation should be made between hemorrhagic pachymeningitis, which is commonly found in general paresis, and in some of the late stages of dementia, and the pachymeningitis or the cerebral hemorrhage which had been described by the essayist. He had had considerable experience with the variety of the disease found among the insane, and even there the diagnosis was exceedingly difficult. In his experience the salient point which stood out prominently was that in these cases there was almost invariably a history of protracted and habitual alcoholism, although in some of the cases the pathologic condition came on irrespective of alcoholism. He detailed two very interesti
cases

Dr. Jacob Frank spoke of having reported two cases before the society years ago. He emphasized the importance of distinguishing between alcoholic and traumatic pachymeningitis. In the traumatic cases the diagnosis was not very difficult, because if there was hemorrhage there was generally paralysis. In 1890 he stated and believed that, if a patient was brought into a hospital and no lesion was found, yet who manifested signs of meningeal hemorrhage or concussion of the brain, tapping of the ventricles would be good practice. He had seen patients on the operating table with contracted pupils, stertorous breathing, very slow pulse, who were relieved of all these symptoms by tapping the lateral ventricles. One of his patients recovered.

Dr. Munro, in closing the discussion, expressed doubt as to whether spinal puncture would have any effect in such instances. In these cases the clots were firmly adherent, and it was necessary to clean them out with the finger or some blunt instrument, thereby relieving intraventricular pressure. He had tapped the ventricles in several cases, and he hardly opened any brain, especially where there was indication of pressure, that he did not tap the ventricles. This procedure relieved pressure on the brain; it was easily done, and was harmless. It cured a case once in a while that could not be cured in any other way.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Earache.

The following is recommended by Hecht in *Med. Rec.* to relieve earache:

℞.	Acidi carbol. liq.	gr. v		30
	Cocainæ hydrochlor			
	Menthol, āā	gr. xv	1	
	Alcoholis	m. lxxv	5	

M. Sig.: To be dropped into the ear.

Atrophic Rhinitis.

While there is but little hope of doing more than relieve the exceeding nauseating odor in this affection, yet if that can be lessened something will have been accomplished, as there is no other disease of the nose which will cause such a disagreeable and fetid discharge. The following combinations are recommended as antiseptics and to so cleanse the membranes as to temporarily do away with the odor:

℞.	Acidi carbol.	gr. iii		20
	Sodii boratis	ʒss	2	
	Sodii bicarb.	ʒi	4	
	Glycerini	ʒiss	3	
	Aquæ, q. s. ad	℥iii	90	

M. Sig.: To be used as a spray three or four times a day; or, according to Merck, the following is of service:

℞.	Iodoformogen	ʒi	4	
	Bismuthi subnit.	ʒi	4	
	Sacch. lactis	ʒi	4	

M. Sig.: Cleanse the nose thoroughly and use freely as a snuff several times a day.

Coakley recommends the following in the treatment of atrophic rhinitis:

℞.	Menthol	gr. xx	1	30
	Aristol	ʒss	2	
	Benzoinol	℥i	30	

M. Sig.: To be used locally in an atomizer once or twice daily.

Treatment of Cough.

The following methods of treating cough are quoted in *Ther. Gazette:*

℞.	Morph. hydrochloratis	gr. ii		12
	Aq. laurocerasi	ʒiiss	10	

M. Sig.: Take from three to ten drops four to six times a day if necessary.

Another recommended by Rummo, in *Jour. des Pract:*

℞.	Morph. hydrochlor			
	Cocainæ hydrochlor, āā	gr. ii		12
	Atropinæ sulph.	gr. 1/100		0006
	Aq. laurocerasi	ʒiiss	10	

M. Sig.: Three to ten drops may be taken in the 24 hours, either in a little syrup or on a piece of sugar.

Heroin may be prescribed as follows:

℞.	Heroin	gr. ¼-ss		015-03
	Sacch. albi	ʒi	4	

M. Ft. capsulæ No. x. Sig: One capsule to be taken three or four times daily.

In cases where there is marked cardiac debility associated with the cough the following should be administered:

℞.	Morph. hydrochlor.	gr. ii		12
	Sparteinæ sulph.	gr. vii		45
	Aquæ destil	ʒiii	12	

M. Sig.: Ten or fifteen drops hypodermically at one dose.

In other instances the following pill may be ordered:

℞.	Ext. opii (denarcotized)	gr. i		06
	Ext. cannabis indicæ	gr. ii		12
	Ext. stramonii	gr. i		06

M. Ft. pilulæ No. iv. Sig.: One to be taken two or three times daily, if the cough is persistent.

Locally, *the following combination may be applied:*

℞.	Cocainæ hydrochlor	gr. ii		12
	Chloralis hydratis	gr. xlv	3	
	Pot. bromidi	gr. xlv	3	
	Glycerini	℥iss	45	
	Aq. destil	℥x	300	

M. Sig.: Put into an atomizer and spray the throat two or three times daily to relieve laryngeal cough.

Treatment of Cystitis.

G. Bjorkman, in *Merck's Archives*, recommends, in the treatment of acute and subacute cystitis, absolute rest in bed; *all active, local interference in the acute stage is contraindicated.* The first care should be to relieve the distress and support the bladder in its attempts at free and complete evacuation. This, *according to the author, is best done by opiates in the* form of suppositories and chloral and the bromids per os. *The diet should consist of milk, soup and gruels.* The bowels should be evacuated by means of saline cathartics. For vesical spasm and tenesmus, *the following may be given in the form* of suppositories:

℞.	Ext. opii	gr. i		06
	Ext. hyoscyami	gr. i		06
	Ext. cannabis ind.	gr. iss		09
	Lupulini	gr. xv	1	
	Butyr. cacao, q. s.			

M. Ft. suppos. No. i. Sig.: Insert one in the rectum as needed two or three times a day.

Internally, the following will be of service·

℞.	Chloralis hydratis			
	Pot. bromidi, āā	ʒiss	6	
	Syr. aurantii	℥i	30	
	Aq. destil, q. s. ad.	℥iii	90	

M. One tablespoonful every three or four hours.

As an urinary antiseptic the following:

℞.	*Formin or urotropin*	gr. viii		50

M. Ft. chart. No. i. Sig.: Take one powder in a glass of water before each meal.

If the urine should be hyperacid a little potassium citrate or acetate should be *added to the water; if too* alkaline a few drops of mineral acid may be added. In cases of subacute cystitis irrigation *may* be carried *out*, using the following solutions:

℞.	Argenti *nitratis*	gr. iss-iiss		09-15
	Aq. destil., q. s. ad.	℥iii	90	

M. Sig.: One-half the amount to be used lukewarm, as an irrigation; or:

℞.	Argentamini	gr. xv	1	
	Aq. destil.	Oii	1000	

M. Sig.: One or two ounces to be used in the form of an irrigation once or twice a day after the acute symptoms *have* ceased.

Solutions for Douches.

Wingrave in *London Lancet*, according to an abstract in *Ther. Gazette*, states that while disclaiming any intention of suggesting a universal irrigant, clinical observation has shown that the neutral salts, especially sodium sulphate, is by far the most reliable basis for an irrigant, especially when pus predominates, but the addition of an alkaline salt will render it more effective. The following formulæ have been used chiefly in connection with diseases of the ear and upper air passages, and are equally applicable to surgery:

℞. Sodii sulph. ....ʒiss-ʒiii 6-12|
Aq. destil ....Oi 500|

M. Sig.: To be used in irrigation as a simple irrigant for pus; or:

R. Sodii sulph. ....ʒiss-ʒiii 6-12|
Sodii bicarb. ....gr. xl 2|65
Aquæ destil. ....Oi 500|

M. Sig.: To be used as an irrigant for mucus or inspissated discharge; or:

℞. Sodii sulph. ....ʒiss-ʒiii 6-12|
Sodii boratis ....gr. xl 2|65
Aq. destil. ....Oi 500|

M. Sig.: To be used when mucus is present.

℞. Sodii sulph. ....ʒiss-ʒiii 6-12|
Sodii bicarb. ....gr. xl 2|65
Glycerini acidi carbol. ....gr. xlv 3|
Aquæ ....Oi 500|

M. Sig.: For irrigation in cases of fetid mucus. In this prescription absolute phenol (gr. ix) may be used.

℞. Sodii boratis ....gr. xl 2|65
Sodii bicarb. ....gr. xl 2|65
Glycerini acidi carbol. ....gtt. xlv 3|
Aquæ ....Oi 500|

M. Sig.: As an irrigation in cases of mucus and crusts.

℞. Sodii sulph. ....ʒiss 6|
Pot. permanganatis ....gr. ii |12
Aq., q. s. ad. ....Oi 500|

M. Sig.: To be used as a deodorant.

℞. Sol. calcii chloridi ....ʒvi 24|
Aquæ ....Oi 500|

M. Sig.: To be used when a hemostatic is indicated.

It should be noted, in making up the foregoing combinations, that the exsiccated sodium sulphate should be used in preference to the crystalline salt and the bicarbonate of soda is preferable to the carbonate.

Inhalation in Tuberculosis.

The following, according to H. E. Lewis in *N. Y. Med. Jour.*, is valuable as an inhalation in cases of mixed infection with marked purulent expectoration, for allaying laryngeal irritation and cough:

℞. Tinct. iodi co. ....ʒiv 16|
Tinct. tolutani ....℥ss 15|
Tinct. cinnamomii ....ʒi 4|
Acidi carbol. ....ʒi 4|
Spts. chloroformi ....ʒi 4|
Alcoholis, q. s. ad. ....℥iv 120|

M. Sig.: To be used in a bottle with large cork, through which two glass tubes are run. Inhale through the shorter tube which does not touch the liquid.

Dyspepsia.

The following, according to the *N. Y. Med. Jour.*, is Dujardin-Beaumetz's treatment of dyspepsia:

1. When the gastric disturbance is due to oversecretion of gastric juice the diet should consist of eggs, farinaceous preparations, vegetables and fruit. The eggs should be soft-boiled, especially the yelks; the farinaceous food should be taken in the form of soups—as potato, turnip, lentil, wheat, oatmeal, barley and macaroni—all of these, of course, to be rendered as thin as possible. The vegetables should be thoroughly cooked and taken in the form of vegetable soup or soup made of small peas well boiled; the same holds good for spinach and turnip. All fruits, avoiding raisins, should be used in the form of jelly. The bread should be well baked or toasted. As a drink, wine mixed with water, light beer or milk mixed with alkaline waters may be used.

2. When the dyspepsia is due to deficient secretion of gastric juice the diet should be made up of peptonized substances, toasted bread, bouillon, mixtures of broths and milk, powdered meats, scraped meats, pepsin and lemonades with hydrochloric acid made as follows:

℞. Acidi hydrochlor. dil ....ʒii 8|
Aquæ, q. s. ad ....Oi 500|

M. Sig.: One glassful after each meal.

3. In dyspepsia due to sympathetic troubles, the diet should be purely vegetable.

Modification of Breast Milk by Diet and Hygiene.

T. S. Southworth's article in The Journal A. M. A., August 2, is worth additional emphasis. He states that modification of the breast milk may be accomplished by means of diet and hygiene. The infant, according to the author, should not be taken away from the breast if it can be avoided. The mother should avoid all unsuitable food. She should take rational exercise, avoid the use of tea and eat only plain food and avoid all stimulating drinks. If necessary one or two feedings, from the bottle, of sterilized cow's milk may be substituted in order to give the mother more time for exercise and recreation.

Picric Acid in Treatment of Gonorrhea.

H. de Brun, in *Rev. Gen. de Clinique de Ther.*, recommends injections of picric acid in the strength of 1 to 200 solution. He states that the injections in this strength are practically painless, and when used in strength of 1 to 100 they may cause pain, but the injections are never intolerable. He states that these injections should be given two or three times daily and retained each time for about three minutes. If much pain is produced by these injections they may be reduced to one a day. A cure of acute gonorrhea is produced, according to his statement, in from four to five days. The discharge changes to a much clearer color and loses its purulence after the first injection. He also recommends it as a very efficient agent in the treatment of chronic gonorrhea.

Medicolegal.

Disorders that Do Not Break Warranty of Good Health.—The Supreme Court of Alabama remarks, in passing, in Mutual Benefit Life Insurance Company vs. Lehman, that forfeitures of policies of insurance by reason of the inaccuracy or falsity of answers to questions, even when properly made warranties, is not favored in the law, since the operation of such warranties may be, and frequently is, to defeat the policy, though neither its issuance nor the death of the assured may bear any relation to the fact concealed or inaccurately or falsely affirmed; and on this and other considerations such warranties are strictly construed against the insurer, and liberally to the upholding of his liability under the policy. Hence it is held that a warranty arising on questions and answers incorporated by reference or bodily into the policy may be broken in the letter without vitiating the contract, but that the breach, to that end, must be of the spirit, intent, and substance of the covenant, as, for example, where the warranty is that the applicant is in good health, the intention is, not that he is in perfect health, but that he is free from ailments calculated or tending to shorten life and increase the insurer's risk. And the court apprehends that a warranty that the applicant has no disease or disorders would not be breached by the fact that he did have a disease or disorder temporary in its nature, and involving no tendency to shorten life. Thus, it says, one may, at the time of answers made, have an acute disorder of the kidneys, due to some specific and known cause, and eradicable both as to cause and condition, so as to leave no impairment of health; or he may have a temporary dyspepsia, yielding to treatment, and not affecting the risk; and surely he may have headaches and muscular pains, none of which would be a disorder within the sense and substance of the warranty, but each of which would be a disorder within its letter.

Skill Required—Not Discovering Septicemia—Evidence.—The legal obligation of the physician to his patient, where his conduct is questioned in an action for malpractice, the Supreme Court of Minnesota says, on the third appearance before it of the case of Martin vs. Courtney, demands of him no more than the exercise of such reasonable care and skill as is usually given by physicians or surgeons in good standing of the same school of practice. To exact more than this would be an unjust imposition on the physician, to encourage expectations of miraculous power that could not be fulfilled, for he is not an insurer of absolute success. The white headstones and monuments that glisten in the sunshine within the sacred precincts devoted to the repose of the dead in the suburbs of every city and hamlet in the land testify with unerring certainty that man is mortal, and the most effective efforts of the healing art are incapable of resisting the conqueror of all. The very best results of science recognize this truth. The medical art of late years has made great advances in resisting the ravages of disease, but it has its limitations, and its achievements are still but an approximation to its highest ideals. It is perhaps unfortunate for the profession that too much is expected from it. Confidence in the physician by the patient is essential, but it should not be such an unwavering faith in his powers as the superstitious savage gives to his medicine man, or makes success the sole metewand of duty, but rather a sensible and intelligent trust that expects reasonable efforts, and, when these have been bestowed, submits with Christian resignation to the inevitable, for "he censures God who quarrels with the imperfections of man." The ubiquitous protectorate which jurisprudence extends to all material interests and to every science and to every art takes note of our common fate, with the possibilities of failure in the professional treatment of disease, and accords the medical practitioner in every case the presumption that he has done his whole duty, which imposes on those who challenge his conduct in the courts the burden of establishing his negligence. In this case the unfortunate termination of the patient's illness was without doubt attributable to septicemia, the germs of which had existed in his system for some length of time before they were discovered; and the issue at the trial was whether the physician, by the exercise of reasonable care, could have discovered the existence of septicemia from the effusions of poisonous pus from the wound, and by closing it up, although to secure the more rapid healing of the stump, he was guilty of malpractice. The patient's wife testified that within four or five days after he was taken to the hospital where he was treated purulent discharges of a poisonous character issued from the wound, and continued to exude therefrom until his death. An expert witness, having the proper qualifications, who was presented to sustain her theory, and who, basing his opinion on her testimony and other evidence to the effect that pus continued to exude from the wound from the beginning until the end, stated that the closing up of the wound was improper, admitted that on the conceded facts such a discharge of pus would be unusual. He further stated that there was a healthy discharge from all wounds that might be easily mistaken by the nonprofessional observer for the poisonous discharge indicative of septicemia, and that the discharge characterized by the wife as pus would be accompanied by certain other evidences of septicemia, which for several months during the treatment concededly did not exist in this case. Now, leaving out of consideration any other evidence than that of the wife and her own expert, the court, which holds that there was no error in directing a verdict for the physician, declares that it can not say that the testimony reasonably tended to support the view that the emissions from the wound were poisonous, or appeared to be of a sufficiently dangerous nature to have required the physician to stop his efforts to heal the wound, and devote his attention solely to a better drainage for fear of blood poisoning. Neither can it hold that the jury had a right to say that a different course should have been adopted on a supposition that the wife's characterizations of the wound discharges were accurate where a nonprofessional judgment would be wholly insufficient for that purpose. In such cases a nonprofessional observer is not to be permitted to diagnose disease, nor define its symptoms, as the basis of judgment. The professional assistance of the physician is sought on the assumption that he has superior knowledge, derived from his art, over a nonprofessional person; otherwise why call him? To this the patient submits himself. Hence the knowledge of the physician must also necessarily be distinguished from the knowledge or judgment of the ordinary layman, and constitute the standard by which any course of medical treatment is to be measured and determined.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine (Philadelphia), October 4,

1 *The Pathologic Relations of the White Blood-Corpuscles; A Case of Hodgkin's Disease of Tuberculous Origin; a Case of Lymphatic Leukemia. O. T. Osborne.
2 *Extirpation of the Gall-Bladder Through the Lumbar Incision, with Report of a Case. W. P. Manton.
3 Old Compound Partial Outward Dislocation of the Elbow and Resection. Martin B. Tinker.
4 *Medical Treatment of Pulmonary Tuberculosis. Jesse Shoup.
5 *An Analysis of Fifty-five Cases of Diphtheria. Henry G. Godfrey.
6 *The Rectal Approach in Obstetrics. W. A. Briggs.
7 A Study of the Bacterial Flora of the Intestinal Mucosa of the Normal Rabbit. Marguerite J. Bullard.
8 The Ward Clinic. James B. Herrick.
9 Medical Practice in Cairo and Prevailing Diseases of Egypt. Nicholas Senn.
10 A New Suture for Securing Fixation of the Kidney. A. H. Goelet.

Medical News (N. Y.), October 4,

11 *Wandering Kidney, and the Results of Operation. Clarence A. McWilliams.
12 *The Nervous Manifestations of Movable Kidney. A. L. Benedict.
13 *The Modern Treatment of More Common Traumatic Injuries of the Eye. Charles J. Kipp.
14 Success in Practice. Charles E. Nammack.
15 *Sterility in the Female and Its Curability. S. L. Kistler.
16 A Case of Chronic Lymphatic Leukemia Accompanied by Lymphosarcoma or Myeloma of the Sternum and Ribs. Charles F. Craig.

Philadelphia Medical Journal, October 4.

17 Address in Obstetrics, Medical Society of the State of Pennsylvania. J. M. Baldy.
18 *A Modification of the Barker Method for the Treatment of Fractures of the Patella, with Illustrations. H. T. Williams.
19 *Notes on the Treatment of Colles' Fracture. J. P. Fiske.
20 Fractures of the Extremities. G. G. Ross and M. I. Wilbert.

Medical Record (N. Y.), October 4,

21 *The Post-Operative History of Fifty Cases of Simple Chronic Glaucoma. Charles S. Bull.
22 Medical Reciprocity, or Interstate Exchange of Licensures. B. D. Harison.
23 *Epidemic Poliomyelitis, with a Report of Ten Cases. D. H. MacKenzie.
24 *Discussion of the Report on Yellow Fever on the U. S. Ship *Plymouth* in 1878 and 1879. W. C. Gorgas.
25 Some Clinical and Operative Phases of Appendicitis. A. H. Cordier.
26 *Traumatic Injuries of the Liver. J. L. Wiggins.

New York Medical Journal, October 4.

27 *Rotation in Lateral Curvature: A Reply to Dr. Judson. Robert W. Lovett.
28 *A Method of Circumcision. Walter C. Klotz.
29 A Case of Cheloid. H. Taylor.
30 Complications in the Passage of a Gall-Stone. (Concluded.) Neil MacPhatter.
31 *Current Differentiation, Illustrated by a Case of Peripheral Neuritis, due to Parenchymatous Degeneration of the Cord. A. D. Rockwell.
32 *Further Remarks on Insufficientia Pylori as a Sequela of Chronic Gastritis; with Report of Fourteen More Cases, Treated Successfully. Mark I. Knapp.
33 Beatson's Cure of "Inoperable" Cases of Mammary Cancer. Jennie G. Drennan.
34 Mastoid Disease in Infants, Two Cases; in Adults, Two Cases; the Latter Complicated with Erysipelas. W. Peyre Porcher.

Boston Medical and Surgical Journal, October 2.

35 *Contagious Conjunctivitis. Myles Standish.
36 *The Simplification of the Treatment of Lateral Curvature. E. H. Bradford.
37 Sensory Hallucination and Its Analogues. (To be continued.) Robert MacDougall.
38 A Case of Transplantation of the Biceps Femoris Tendon. Charles F. Painter.

Cincinnati Lancet-Clinic, October 4.

39 The Present Status of Brain Surgery. H. J. Whitacre.
40 Ups and Downs of a Physician's Life. (Continued.) George J. Monroe.

Pediatrics (N. Y.), September 15.

41 *The Therapeutic Value of the Internal Use of Carbolic Acid. S. Henry Dessau.
42 A Case of Meningitis. Hugh N. Leavell.
43 Child Labor. P. F. Barbour.

Medical Fortnightly (St. Louis), September 25.

44 Diagnosis of Cancer of the Breast. Alfred Roulet.
45 A Demonstration of Some Pathologic Specimens Illustrating the Various Diseases of Infancy and Childhood. I. A. Abt.
46 Diseases of the Lungs and Pleura. Albert Abrams.

Medical Age (Detroit, Mich.), September 25.

47 *Dislocation of the Hip During Normal Labor. L. B. Newton.
48 The Gall-Bladder. J. Lively Johnson.
49 *Shall We Make Our Consumptives Social Outcasts? J. Howe Adams.

Archives of Ophthalmology (New Rochelle, N. Y.), July.

50 *Primary Sarcoma of the Iris. Casey A. Wood and Brown Pusey.
51 *A Case of Traumatic Enophthalmos. H. W. Kilburn.
52 Two Noteworthy Cases of Extraction of Iron from the Vit- [illegible] Means of the Giant Magnet. A New [illegible] Kipp.
53 A [illegible] the Lachrymal Sac Caused by the [illegible] Charles J. Kipp.
54 A Case of Streptothrix in the Lower Canaliculus. Charles J. Kipp.

September.

55 A Case of Metastatic Carcinoma of One Optic Nerve, with Peculiar Degenerations of Both Nerves. Ward A. Holden.
56 *The Purely Anatomical Proof of the Existence of Uncrossed Optic-Nerve Fibers in Man. Prof. St. Bernheimer.
57 A Case of Abnormal Tortuousness of the Retinal Vessels. Hugo Levin.
58 On the Histology of the Scars Following Posterior Sclerotomy. J. Meller.
59 *The Rôle of Scleral Scars in Operations for Glaucoma. N. Andogsky and P. Selensky.
60 *Acuteness of Vision and Astigmatism. Adolf Steiger.
61 Endarteritis Obliterans Arteriæ Centralis Retinæ Diffusa. J. Markow.
62 *Treatment of Corneal Infiltrations by Iodine-Vasogen. Alexander Duane.
63 Albuminuric Retinitis in Syphilis. C. Zimmermann.

University of Pennsylvania Medical Bulletin (Philadelphia), October.

64 A Scheme for Taking Histories, Conducting Examinations, Recording, Filing and Indexing All the Data Observed in the Management and Treatment of Surgical Affections. Montgomery H. Biggs.

Colorado Medical Journal (Dehver), July.

65 Medical Legislation. S. D. Van Meter.
66 Granular Ulcer of the Cervix Uteri. Clarence L. Wheaton.
67 Recovery of a Needle Which Had Entered Patient's Body Many Years Before. A. Mansfeld Holmes.

Archives of Pediatrics (N. Y.), September.

68 Report of a Case of Extreme Enlargement of the Spleen with Anemia. Samuel McC. Hamill.
69 *Some Remote Diseases Arising from Tonsillar Infection. F. Forchheimer.
70 *Conclusions as to the Treatment of Tuberculous Peritonitis in Children. Thomas M. Rotch.
71 Two Cases of Umbilical Fistulæ Due to Tuberculous Peritonitis. George N. Acker.
72 Typhoidal Appendicitis in Children. A. Seibert.

Canada Lancet (Toronto), October.

73 *Presidential Address, Canadian Medical Association. Francis J. Shepherd.
74 Address in Surgery to the Canadian Medical Association. John Stewart.
75 *Chauvinism in Medicine. William Osler.

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76 *Operation for Recurrence of Cancer After Hysterectomy. E. W. Cushing.
77 Lazarus Riverius. 1589-1655. (To be concluded.) Ira J. Prouty.
78 Ophthalmia Neonatorum. I. L. Firebaugh.

Medical Sentinel (Portland, Ore.), September.

79 Infected Wounds. W. T. Phy.
80 A Rudimentary Uterus from a Clinical Standpoint. L. T. Brock.
81 Treatment of Appendicitis. Park W. Willis.
82 Some of the Curable Forms of Insanity. Robert L. Gillespie.
83 Ovarian Cysts Complicating Pregnancy—A Report of Three Cases. W. V. Kingsbury.

American Journal of Obstetrics (N. Y.), September.

84 Two Cases of Deciduoma Malignum. Charles P. Noble.
85 *Spinal Anesthesia. Samuel L. Weber.
86 *Mammary Substance in Uterine Fibroids. H. W. Crouse.
87 A Dicephalic Monster Obstructing Labor. G. M. Boyd.
88 *Puerperal and Gestational Paralyses. Charles J. Aldrich.
89 *What Are the Known Facts About Follicular Cystic Degeneration of the Ovaries? A. Goldspohn.
90 Fetal Mortality in Induced Labor. Warren R. Gilman.

Canadian Journal of Medicine and Surgery (Toronto), October.

91 The Social Phase of Smallpox and Vaccination. P. H. Bryce.
92 Smallpox—A Brief Clinical Description of 1500 Cases. Charles A. Hodgetts.

Fort Wayne Medical Journal-Magazine, September.

93 Very Dangerous Symptoms Following a Tarantula Bite. J. S. Boyers.
94 The Treatment of Chronic Parenchymatous Prostatitis. Joseph R. Eastman.

Chicago Medical Recorder, September 15.

95 *The Classification of Cirrhosis of the Liver. Arthur R. Edwards.
96 An Operation for Stricture of the Rectum in Women. Thomas J. Watkins.
97 *Cirrhosis of the Liver in Infancy and Childhood. Frank X. Walls.
98 *Pericarditic Pseudocirrhosis of the Liver. James B. Herrick.
99 Cases of Pleurisy with More or Less Permanent Pneumonic Induration—Are They Tuberculous? Robert H. Babcock.
100 Arthritis Deformans in a Child, with Several Lymph Gland Enlargements and Splenic Tumor. A. F. Lemke.

Clinical Review (Chicago), October.

101 The Leading Chemical Causes of Gastro-Intestinal Catarrh. N. H. Adams.
102 The Course and Ordinary Care of Acute Intestinal Catarrh. S. R. Slaymaker.
103 Surgical Cases (Pyosalpinx, etc.) Raymond C. Turck.
104 Eye-strain Headache. J. Elliott Colburn.
105 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.
106 Tuberculosis of the Joints. A. J. Ochsner.

St. Paul Medical Journal, October.

107 *Fractures of Patella, with Special Reference to Their Treatment by Suture. Walter Courtney.
108 *Can We by Modern Methods Anticipate Impending Attacks of Puerperal [illegible] Rothrock.
109 *The Position [illegible] binson.
110 *The Requiren [illegible] H. W. Bracken.
111 Some Clinic [illegible] Conditions. A. C. Rogers.
112 *Intestinal Anastomosis: Comparative Merits: with Report of Three Unpublished Cases. Archibald MacLaren.

Albany Medical Annals, October.

113 The Insane in New York State. Robert M. Elliott.
114 Gonorrheal Prostatitis, Acute and Chronic: Etiology, Pathology and Treatment. James W. Wiltse.
115 The Influence of the Discovery of the Relation of Bacteria to Disease on the Practice of Medicine Exclusive of Surgery. (Continued.) H. Judson Lipes.

Kansas City Medical Record, September.

116 *The Results of the Experiments and Discoveries of Professors Loeb and Matthews Examined. Jos. Clements.
117 *The Operative Treatment of High Myopia. J. W. Sherer.

Pacific Medical Journal (San Francisco), September.

118 The Vaccination of Porto Rico—A Lesson to the World. Azel Ames.
119 Epilepsy. W. Tourn.

New Orleans Medical and Surgical Journal, October.

120 The Medical Society and Its Relation to the Medical Profession. T. E. Schumpert.
121 The Transmission of Tuberculosis. Whyte G. Owen.
122 The Education of the People as a Factor in the Prevention of Tuberculosis. F. M. Thornhill.
123 Tuberculosis Among Our Negroes in Louisiana. J. M. Barrier.
124 Vital Statistics of Tuberculosis in Louisiana. G. Farrar Patton.

Alabama Medical Journal (Birmingham), September.

125 The Importance of the Early Diagnosis of Hip Disease. Wm. T. Berry.
126 Ectopic Gestation. Wyatt Heflin.
127 To What Extent Should Physicians Supervise the Education of Our Boys and Girls, with Special Reference to College Work? D. L. Wilkinson.
128 Inflammatory Conditions of the Vermiform Appendix, with Report of Cases. W. T. Henderson.
129 A Case of Coexisting Intra- and Extra-Uterine Pregnancy, One Fetus Expelled at Third Month, the Other Removed by Operation Three Months Later. Harry T. Inge.
130 Atresia of the Vagina. W. H. Blake.

Medical Mirror (St. Louis), September.

131 Fibroid Tumor of the Uterus: Operation. Suppurative Salpingitis and Peritonitis (Pelvic Abscess): Operation. Lewis S. McMurtry.

Texas Medical News (Austin), September.

132 Epilepsy. J. R. Nichols.
133 Medical Nomenclature. S. A. Lowrie.
134 The Prevention of Tuberculosis. R. W. Baird.
135 Congenital Absence of Rectum. Colostomy. E. A. Malsch.

Southern California Practitioner (Los Angeles), September.

136 The British Medical Association. Andrew S. Lobingier.
137 A Study of the Diagnosis of Incipient Pulmonary Tuberculosis. (To be continued.) F. M. Pottenger.
138 The Climate of the Eastern Foothills of Southern California. C. A. Sanborn.

1. **The White Blood Corpuscles.**—Osborne describes the conditions of the white blood corpuscles in pathologic states, and reports a case of lymphatic leukemia, which he considers of interest. He concludes his paper by saying: "1. The lymphocytes are probably not the origin of the polynuclear leucocytes, else with so many lymphocytes we ought to have an increase of the more mature cells. 2. Normally, without medication to cause it, in lymphatic leukemia, as has been observed by others as well as ourselves, the uric acid and phosphorus output is not increased, hence these cells do not break down more rapidly than in normal individuals with only 8000 or so leucocytes. This means that a normal person with from 5000 to 8000 leucocytes has no more nuclear breakdown than these

patients with nearly 40,000 leucocytes. 3. Arsenic, alkalies and nucleic acid reduced the size of the glands and spleen in this case, but caused destruction of red corpuscles. 4. Nucleic acid alone seemed to reduce positively the number of the white cells. 5. The red cells and the general condition always and consistently improved under Armour's red bone-marrow. Hence *it is justifiable to assume that in this case, if not in all cases of lymphatic leukemia, the bone-marrow* is diseased. 6. The malarial infection reduced the number of the white cells and the size of the glands more than any treatment instituted."

2.—See abstract in The Journal of September 27, p. 791.

4. **Pulmonary Tuberculosis.**—The drugs which we use in pulmonary tuberculosis are stated by Shoup as follows: 1. Those that promote healthy metamorphosis; 2, those that are bactericidal and being eliminated by the lungs come nearest to checking the disease *in situ;* 3, that class of drugs which stimulate phagocytosis. In the first class he includes arsenic, strychnin, phosphorus and vegetable tonics, noticing also the special properties of the cacodylates and phosphorus in the form of phospho-albumin, nucleins, etc. Strychnin is also a respiratory, heart and nerve stimulant and should be given freely, *as well as various bitter and vegetable tonics.* Of the second class of drugs creosote may be taken as a type. He has had good results with it where it did not interfere with digestion. When administered in other ways than by the mouth it is much less efficient. While laboratory experiments do not seem to indicate that creosote can have any destructive effects on the bacilli, clinical results seem to show that it may do this. Guaiacol, which has succeeded creosote on account of its being less disagreeable, is preferred where gastric symptoms are prominent and should be given as creosote is given, in large doses. Shoup has used thiocol, but found it in no way superior. He has used ichthyol, but discontinued it on account of the disagreeable eructations and vomiting, though others *have good results with it.* Other drugs that have been employed are methylene blue, formaldehyde, iodin and its compounds, etc. The third group of medicines include the serums and other drugs such as cinnamic acid, given chiefly to stimulate and multiply the leucocytes. He has employed lately cinnamic acid in combination with arsenic and opium, with apparently good results. Harper's theory of the effect of urea is mentioned and Shoup is experimenting on the subject, but it is as yet too early to give results. Serum treatment has not yet met expectations, but he holds we have in it a useful adjuvant when used with other remedies. His own experience agrees with those who claim that patients improve oftenest when treated with the serum, together with other treatment. *As regards special symptoms he mentions* strychnin, hydrochloric acid, menthol, thymol, etc., for the gastric and intestinal symptoms; cold baths for the fever; codein for the cough and for diarrhea a guarded diet, papein or pepsin with guaiacol carbonate and bismuth subnitrate or tannalbin or tannagen or iodomuth with opium. In the extreme cases of insomnia he has had excellent results from hyoscin hydrobromate. He thinks the patient who can not avail himself of a climatic change should be seen every day and watched, and treatment employed according to conditions.

5. **Diphtheria.**—Godfrey gives an analysis of 55 cases all treated with concentrated antitoxin in doses of 2000 units or more. The average dose was 4500 units. He notices also the persistence of diphtheria bacillus in the throat in a number of cases from ten to thirty-seven days, averaging thirteen days. He remarks as regards the use of antitoxin that it is not depressing to the heart. In 18 of the cases irregularities or intermissions of the pulse were noted. Only slight untoward effects of antitoxin were noted in arthropathies of knee and hip in 2 cases, urticarious rashes in 8. All these occurred between the eighth and eleventh day and were of short duration. The amount of antitoxin used did not seem to produce any serious anemia, and in fact the anemia was less with the larger doses than with the smaller ones.

6. **Rectal Approach in Obstetrics.**—Briggs claims that he has had good results from operating through the rectum to dilate the cervix in delayed labor, also in delayed rotation or in correcting the imperfect flexion or delayed extension by this method.

11. **Wandering Kidney.**—The paper of McWilliams is too *elaborate and detailed for abstracting.* He gives, however, at the close the following résumé of the Presbyterian Hospital (N. Y.) statistics of movable kidney: "Total, 61 cases: 2 occurred in men; 59, or 96.7 per cent., in women; 38, or 64.4 per cent., were married women; 21, or 35.6 per cent., were single women. Of the married *women, 22, or 37.2 per cent.* of the whole 59, had borne children. Average number of children to each, 2. Right kidney movable in 53 cases, or 86.8 per cent. Left kidney movable in 4 cases, or 6.6 per cent. Both kidneys movable in 4 cases, or 6.6 per cent. Average was 33 1/3 years; youngest, 17; oldest, 65 years. Trauma antecedent in only 7 cases, or 11.4 per cent. Complications: Femoral hernia in 2. Gastro-intestinal indigestion in 25. Marked constipation in 28; diarrhea in 3. Jaundice in 1. Chronic appendicitis in 9. Urinary symptoms in 18. Renal colic in 7. Renal calculus in 1. Pyelitis in 1. Chronic nephritis in 2. Neurasthenia in 11. General enteroptosis in 3. Uterine abnormalities in 5. Results of operation: Forty-two cases followed after operation showed 22, or 52.3 per cent., cured of subjective symptoms; 15, or 35.7 per cent., benefited; 5, or 10.9 per cent., no benefit. Uncomplicated: Nineteen cases, or 31.1 per cent., *of the whole* 61. *Of these* 12, or 63.1 per cent., were cured. Complicated: Twenty-three cases, or 34.4 per cent. of the whole 61. Of these, 10, or 43.4 per cent., were cured. Recurrence occurred in 6 cases out of 36 examined, or 16.6 per cent. Mortality of operation: Two cases in 61 operations, or 3.2 per cent."

12. **Nervous Manifestations of Movable Kidney.**—From a study of the patients in the Buffalo Hospital of the Sisters of Charity, Benedict has noticed in a number of cases a more or less disordered nervous system, which he considers not as the results of the first degree of kidney lesion alone, but would rather suggest that the causal relation was reversed. The cases include mania, melancholia, suicidal tendencies, nervous prostration, etc.

13. **Injuries of the Eye.**—The various classes of injuries of the eye are reviewed in detail by Kipp, who insists on the importance of antisepsis in their management and thorough examination. The paper is too detailed for abstract in the space here given. In conclusion he remarks that injuries of the eye are not infrequently the cause of litigation. It is of importance that the surgeon who first sees the case should not only make a thorough examination of the injured eye, but also ascertain the exact condition of the non-injured one at the time, noting the exact amount of vision in each when examined separately, and all peculiarities he may observe in the non-injured eye, as defects in this eye may subsequently be attributed to the injury of the other eye.

15. **Sterility in the Female.**—The causes of sterility are enumerated by Kistler as follows: "1. I believe that many causes of this condition, as well as of uterine disease in general, are the result of loss of sympathetic nerve force, the effect of disease, or injury arising from sexual *demands.* 2. An indefinite number of cases are undoubtedly the result of imperfect participation of the uterus in the sexual orgasm, and the consequent lessened respiratory action of the uterus. 3. Inactive ovaries. 4. Inactive condition of uterine mucosa. 5. Congenital deficiencies, anomalies of the hymen and malformation of the congenital tract. 6. Arrested development of ovaries and tubes. 7. Excessive acid reaction of secretion of vaginal mucus membrane and catarrhal changes in the mucus membrane of the uterus and tubes. 8. Vaginismus; neurastheniæ; exhaustion; physical decadence; nymphomania. 9. Amenorrhea; dysmenorrhea; narrow internal and external os. 10. Flexions; versions. 11. Laceration of cervix; profuse leucorrhea; *endometritis.* 12. Gonorrhea, especially with involvement of adnexa. 13. Constitutional diseases and conditions. 14. Neoplasms; myomas; malignant growths; hypertrophy. 15. Ingestion of certain articles of *diet and medicines.* 16. Obesity. 17. Incompatibility. 18. Higher education." He sums up his *conclusions in the following:* "1. The great major-

ity of cases of sterility are dependent upon slight causes. 2. The greater number of cases are curable. 3. Many apparently hopeless cases are curable. 4. Length of time a case has persisted is no bar to treatment, providing organic change has not obtained which precludes possibility of cure. 5. Treatment used must always depend upon the case in hand."

18. **Fractures of the Patella.**—Williams describes his method of performing subcutaneous suture of the fractured patella which varies from the Barker method by the use of a double ligature. In introducing the needle it can be passed either way from above downward or from below upward. In introducing the ligature he threads it double into the eye of the needle after the needle has appeared at the opposite incision from which it is introduced. Then holding the two ends of the ligature outside of the skin, he withdraws it enough to bring it, with the loop, just beyond the opposite side of the fragments of the patella. Then without withdrawing it from the wound, he passes it above the fragments and brings it out through the incision at its first point of exit. The loop is then unthreaded from the eye of the needle and the needle withdrawn. In this manner the ligature is doubled around the fragments. By not completely withdrawing the needle before it is passed above the patella, it prevents the skin or the subcutaneous tissue from being caught in the ligature as is apt to be the case with the Barker method. After the needle is withdrawn, one end of the ligature is passed through the loop and after pulling both ends tightly they are tied firmly, thus making what is known as the Staffordshire knot. A little manipulation over the seat of the fracture as the ligature is being tied, arranges the fragments in their proper position. The ends of the ligature are cut off and the small incisions above and below the patella are closed with one or two catgut sutures, the parts dressed antiseptically and the limb put in the anterior and posterior splint. He claims as the advantages of this method, the double ligature, the prevention of integument or subcutaneous tissue being caught between the ligature and fragments, and by using the Staffordshire knot the ligature can be more tightly drawn and the fragments held more closely together. He has applied this method in two cases with very satisfactory results.

19. **Colles' Fracture.**—The common errors in the treatment of Colles' fracture, according to Fiske, are failure to use an anesthetic, failure to place the hand in ulnar flexion, failure to employ massage, and failure to emply the hot-air box with a temperature of 250 to 350 F., especially in patients over 40 years of age, and too early attempts to break up adhesions about the joint and tendons by wrenching. He remarks that fractures of the lower end of the radius are seldom simple affairs of the bone, but are usually complicated with injury of the soft parts and adjacent joint. It is not merely a bony lesion requiring simple flexion after rotation, but there are other injuries requiring protection and massage. The dressing should be changed as the edema subsides, and a removable fixation apparatus, preferably two light plaster-of-Paris shells, should be employed. Only in those cases where there is a tendency for the fragments to slip, should the splint be kept on for a considerable time, a period sufficiently long for the fragments to become united, usually ten days. We may employ two lateral splints of light wood, properly padded, applied with the forearm semiflexed and in semipronation, or else a light plaster-of-Paris cast. The latter requires considerable skill and trouble. The fixation apparatus should at first extend downward to the distal end of the metacarpals, the fingers having free play. As the case progresses the splint must be removed for inspection, for massage and for the application of dry heat.

21. **Glaucoma.**—Fifty cases are analyzed by Bull, all operated on by iridectomy, which was done on one eye alone in 6 cases; in both eyes at varying intervals of time, in 31 cases; and in both eyes simultaneously in 13 cases. From a careful study Bull concludes "where the disease undoubtedly exists in both eyes of a patient better results as to visual acuity and the field of vision are obtained by a simultaneous operation on the two eyes. The operative effect of iridectomy is more certain and undeniable, the earlier it is done. The slightest narrowing of the field, whether for form or color, demands operation, once our diagnosis is made. The curative action of iridectomy stands in direct proportion to the increase of tension. Early iridectomy, while the iris is still mobile, the field but little contracted, and the cupping of the disc slight, very often arrests the disease, at least for a long period, and preserves what sight remains. *Done early*, it offers the best prospects for the arrest of the process, and its effects are either permanent or very prolonged."

23. **Epidemic Poliomyelitis.**—MacKenzie reports an outbreak occurring in two towns in Dutchess County, New York; 17 cases with 7 deaths, or a mortality of over 41 per cent. Most of the cases were those of adults. In two of the fatal ones the diagnosis of Landry's paralysis was made and only two out of the whole number presented the classical symptoms of poliomyelitis.

24. **Yellow Fever.**—Gorgas answers the objections as to the historical instance of the recurrence of yellow fever on the United States Steamer *Plymouth*, after having been wintered in the north, by assuming that the stegomyia mosquitoes hibernated on board the vessel and it, therefore, became re-infected. He gives letters from Drs. Finlay and Guiteras, well known as experts on the disease, in which they recognize this possibility.

26. **Injuries of the Liver.**—Wiggins reports a case of liver rupture from traumatism causing considerable loss of hepatic substance, the patient nearly moribund. The treatment consisted in suturing the wound with catgut, cleansing the abdomen, and closing the wound without drainage, but later establishing drainage by resection of the ribs. The result was good. His conclusions are given as follows: "1. Delayed bloody vomit or stool in obscure abdominal injuries, is indicative of rupture of hepatic substance without laceration of its fibrous or serous coverings. 2. No method of suturing can be entirely satisfactory. (*a*) Because if laceration is superficial it is not required. (*b*) If laceration is deep, the dead space can not be obliterated; as a consequence there is an accumulation of arterial and venous blood mixed with bile from this vascular organ, which may become infected, forming an abscess. If accumulation is excessive, break line of suture and tear protective adhesions. 3. The suture material, to be of any service, must be large; to control hemorrhage it must exert pressure. In the first instance many lobules must be destroyed, and there will be interference with venous and arterial branches and secreting radicles. In the second, a tight-drawn suture may cut through friable structure or cause tissue necrosis. 4. The use of any sealing material, with the possible exception of the actual cautery, is not sound in theory or warranted by results. The best results accrue from drainage by the most direct route and isolating damaged structure. 5. Immediate operation, irrespective of degree of shock, is the only rational method of treatment and the only one which has yielded good results."

27. **Rotation in Lateral Curvature.**—Lovett's article is an illustrated one replying to the criticism of Dr. Judson in The Journal of February 22. He thinks by experiments which he illustrates, he proves his original statement that a strip of sponge rubber rotates just as the spine does in the same position, and that in the flexed position it rotates in one way, and in the over-extended position in the opposite way.

28. **Circumcision.**—The method of circumcision here described by Klotz consists in the withdrawal of the prepuce backward and girdling the penis a little above the corona, taking out a cuff-shaped portion of the skin, but sparing the areolar tissue as much as possible. The cuff-shaped portion should be dissected out and the severed portions of the skin united by interrupted suture. This is not practicable in very young children, and requires a little more time in adults than the ordinary method, but he thinks the result pays for the additional trouble.

31. **Current Differentiation.**—Rockwell reports a case of neuritis, somewhat unusual in its occurrence and distribution,

in which the static and faradic current failed to be of use while the galvanic current was of decided benefit. He offers the case as an illustration of the need of proper study and differentiation of the currents used in different cases.

32. **Insufficientia Pylori.**—This condition is held by Knapp to be the result of chronic gastritis, and a cause of symptoms usually considered as those of chronic dyspepsia. They are diarrhea of constipation or both, fulness in the abdomen, cramps, pain, or a sensation of pressure or of emptiness, or a feeling of weight in the abdomen, due to gases developed in the stomach or intestines; headache, anorexia, nausea, singultus are among the symptoms. Hot and cold sensations and disturbance of sleep are also unpleasant symptoms. He recommends for the diet the withdrawal of all acid foodstuffs and whatever contains or generates gases. He insists on mastication and deliberation in eating: Too much milk, too many eggs, radishes, onions, egg plant, cabbage, beans and peas, develop gases and should not be taken, though the latter may be used in moderate quantity if the cellulose skin has been removed before cooking. The same is true of whole-grain bread which contains cellulose, which is hurtful, and he remarks on the popular misconception as to its utility in some cases. Medicinal treatment consists in giving alkaline drugs to help intestinal digestion, the use of pancreatin and of small doses of inspissated ox gall; the well-known rhubarb and soda mixture has its place here. For the anorexia he suggests condurango, cinchona, gentian and a little HCl with nux vomica. For the constipation he gives half a teaspoonful of sodium phosphate two or three times a day in a tumblerful of hot water, half an hour before meals, and water alone made a little bitter for its moral effect, every two hours, is sometimes useful. He says it is wonderful how such "heroic" treatment will cure constipation provided it is not due to organic troubles. For chronic diarrhea he has found strychnin best and he carries it up to a very large dose, beginning with 1/30 of a grain and increasing it to 1/7. He reports fourteen cases treated.

35. **Contagious Conjunctivitis.**—The more common diseases of this class considered here by Standish are acute catarrhal conjunctivitis, which is self-limited, as a rule, and seldom followed by secondary troubles. He advises the method of aborting it by dusting powdered dry iodoform in the conjunctival sac. Trachoma is treated of more at length. He points out that the curing of individual cases is the best method of stamping out the disease, quoting statistics from the Boston Charitable Eye and Ear Infirmary and those given by Dr. Wilder in his papers on Trachoma in the State of Illinois, in support of this view. As regards gonorrheal ophthalmia he has found protargol of late years of special value; simply parting the lids and flooding the conjunctival sac once in every three hours. The average duration of cases treated with nitrate of silver was 23½ days; with a strong solution of protargol it was only 16½ days. The strength of the protargol has been constantly increased up to the habitual use of a 20 per cent. solution. Diphtherial conjunctivitis, which is a much rarer condition, is also noted, and a number of cases reported. All of these were treated with injections of antitoxin, and in 35 cases in only 3 was the cornea injured sufficiently to produce total blindness. These 3 were complicated with measles.

36. **Lateral Curvature of the Spine.**—What the practitioner needs to consider in lateral curvature of the spine is stated by Bradford as follows: "1. Measures to promote flexibility in a localized position of the spine. Means for the greatest possible rectification of curves. 2. Gymnastic exercises for the development of such muscles as may be needed in given cases, to maintain a corrected attitude. 3. Appliances preventing faulty positions of the spine. 4. Means of recording the condition and progress in cases." He remarks that while elaborate apparatus is often of use, the greater the elaboration the less general is it applicable. He describes methods of employing inexpensive appliances and suggests the following: "A large gas-pipe frame is made and furnished with adjustable sockets. Playing in a pair of these is a cast-steel swing, bent so as to furnish a foot-piece, and at the top at one end so as to fit into a long handle, which will enable the swing to be moved at will or with weights as a pendulum. A small cross rod placed in sockets adjustable by screw pressure, at any desired height on the frame, regulates the point of back pressure, and straps secure the patient to this and to the swing in any desired position. Any desired amount of correcting force can be given. The frame can be made to rest in a doorway, secured by a cord and staples. To arrange for different sizes in patients, an extra swing will be needed, but a fine adjustment is arranged by a cross rod. If this swing is reversed and lowered, it can be applied to the back of the seated patient, secured by proper pressure straps, and made to serve as a trunk-bending appliance with pendulum force. It is believed that a serviceable amount of correcting force can be furnished in the manner described, which, when applied with painstaking thoroughness, will give good results in increasing the flexibility in suitable cases, and moreover, this is at the disposal of every surgeon who has the patience and time to devote to a given case." Dumb-bell exercises for muscle development, etc., are also mentioned.

41. **Carbolic Acid.**—Dessau has found carbolic acid of special value in cases of influenza in children characterized by a dry aggravating cough, somtimes paroxysmal, with little or no expectoration, and that of a tenacious viscid character when present, few or no râles in the lungs, those heard of a dry adhesive quality, and in the intrascapular spaces an indefinite harsh quality of the respiratory murmur, comparable to the broncho-vesicular murmur of Flint. The cough may or may not be associated with coryza, sometimes excoriative; or a pharyngitis, a post-nasal catarrh, a conjunctivitis, or even an otitis media. There may also be a marked raise of temperature lasting for a number of days. The most notable feature is the persistence of symptoms and tendency to alternate with each other as a recrudescence of the trouble. Intestinal symptoms may also alternate with those of the respiratory function. All such cases that have been treated with carbolic acid given in the strength of 1, 2 and 5 per cent. solution dose, according to the age of the patient. An infant under one year of age receives a teaspoonful of the 1 per cent. solution every two hours, while the child of five years may get the same dosage of a 5 per cent. solution. A small amount of glycerin aids in making the solution more complete and cinnamon water may help the taste. Only chemically pure acid should be ordered for internal use and the mothers always be told that the medicine smells of carbolic acid. He has found it perfectly harmless and free from secondary effects when administered in the dose mentioned. The only idiosyncrasy observed against its use has been vomiting.

47.—This article has appeared elsewhere. See The Journal of October 4, title 104, p. 861.

49. **Consumptives as Social Outcasts.**—The region in the Adirondacks in which Adams has been visiting has been the resort of consumptives for many years and until within the last two years they were treated with humanity and consideration. The proprietor, himself forty years ago a consumptive, says he has never seen a case develop from the association of consumptives with non-consumptives, but two years ago he found that his old patrons were objecting to this association and the feeling has grown tremendously. Hotel proprietors are announcing in this region that no consumptives are received, and the fear of the disease seems to have infected everybody in the neighborhood, with the result of very serious aggravation of the misery of the consumptives. Adams suggests that a heavy enough burden has been put on these patients and that words are powerful. He thinks we should eliminate the term contagious in the discussion of phthisis. He suggests that unhealthy houses in the cities should be picked out and watched and re-built, and practitioners should educate their patients and the public how to handle the disease, which, though widespread, is not malignantly contagious. He says if we must have registration, let it be of the places, not of the people.

50. **Primary Sarcoma of the Iris.**—Wood and Pusey report cases and discuss the literature, tabulating a large number that they have found. They speak strongly in favor of enuclea-

tion in preference to iridectomy and other methods. From their study of these cases they say only one conclusion is evident, namely, when the diagnosis of sarcoma is established the globe containing the growth should be immediately enucleated.

51. **Traumatic Enophthalmos.**—After reporting a case, Kilburn discusses the etiology and favors Shoemaker's opinion that it is due mainly to rupture of Tenon's capsule or the thickened bands of this, known as the check ligaments.

56. **Uncrossed Optic Nerve Fibers.**—Bernheimer reports certain observations which he has made on the eye and brain of a child with bilateral microphthalmos and on account of the peculiar and irregular arrangement affording special facilities for the study of this question. He finds that in the left half of the chiasm in 20 dorsal sections, completely isolated bundles of fibers can be seen and followed for long distances, passing deep downward and inward from the left tract, and through the chiasm parallel to its lateral margin, far into the optic nerve. In the tract single fibers of the most lateral of these can be followed backward almost to the point where the tract meets the peduncle, and forward in the nerve of the same side almost to the optic foramen. This, he says, is the first directly anatomical proof of the existence of uncrossed fibers, and the question is ultimately settled in the strict anatomical sense, in favor of semi-decussation.

59. **Scleral Scars in Glaucoma Operations.**—Andogsky and Selensky conclude that scleral scars possess a certain permeability at a certain stage of their development, but not in the degree claimed by the adherents of the filtration-scar theory. The permeability is of comparatively short duration. In conclusion they remark in regard to the recently proposed incision of the chamber angle that it is to be regarded as simply for a short time providing an artificial channel for the exit of the aqueous humor, and it probably exerts only an indirect influence on the restoration of the normal channels.

60. **Acuteness of Vision and Astigmatism.**—From the study of 440 boys, Steiger concludes that perverse astigmatism even when of a low degree, reduces vision gradually and correction causes marked improvement. It is in this form that asthenopia is most frequent and pronounced. The lower and middle degrees of corneal astigmatism up to 1.75 D. permit in the young good vision which usually can be improved by correction. This, however, is less frequently required on account of the diminution of vision than on account of the asthenopia. The higher degrees of astigmatism, 2 D. or more, cause usually a diminution of vision to 1/3 or 1/2 and frequently with the best correction vision is not improved beyond the moderate average 1. Here correction is indicated not only on account of asthenopia, but also on account of diminution of vision. It is not wise to leave uncorrected an eye with a poor vision at an age when myopia threatens. He promises in a later publication to discuss the relation between astigmatism and myopia. Persons with unilateral astigmatism have rather poorer vision than those with bilateral astigmatism of the same degree and are less readily corrected. The question whether one eye should be corrected or not in such cases depends on the condition of the other eye, age, calling, and the presence or absence of asthenopia. In general, a strong astigmatic glass before one eye is not well borne when the other is normal.

62. **Iodin-Vasogen in Corneal Infiltration.**—Duane has used this preparation in 19 cases, 2 of which he reports. His conclusions from his study are given as follows: "1. Iodin-vasogen is a valuable application in infiltrated and spreading ulcers of the cornea, whether associated with purulent conjunctival secretion or not. It is particularly indicated in those cases in which the galvano-cautery is contra-indicated by the situation of the infiltrate. 2. It rarely causes pain, if not applied in excess, and never causes any unpleasant reaction or untoward effects. 3. Preliminary anesthetization of the cornea with cocain is rarely required, and in general is better omitted. 4. The application is best made every other day until the infiltrate begins to shrink decidedly and then should be made every three or four days until the infiltrate disappears."

69. **Tonsillar Infection.**—The mechanism of diseases of remote origin from tonsillar infection is discussed by Forchheimer, who reports a case of appendicitis and cases where jaundice occurred secondary to infection of the tonsils. He discusses the physiology and pathology of tonsillar inflammation, concluding that the bacilli are taken up by these organs and carried into the general circulation through either the lymphatics or through the blood, thus infecting the points of least resistance in other parts of the body. Jaundice may also be produced by way of the gastrointestinal tract causing gastritis followed by duodenitis, but this method of infection may be excluded in his cases.

70. **Tubercular Peritonitis.**—Rotch is preparing a report of the cases of tubercular peritonitis that have occurred in the Children's Hospital, Boston, during the past eight years. The present paper is simply compiled to state when, and in what class of cases laparotomy should be performed with a reasonable chance for recovery, and to present some cases which recovered after the operation for laparotomy. The chief points to be noticed are: 1. That tuberculous peritonitis is rare in the first year, and when it occurs at this age, is almost invariably fatal, being part of a general tuberculosis and not amenable to treatment by laparotomy. 2. That the most common age for the disease to appear is from one and one half to four years. 3. That all the cases of tuberculous peritonitis may be divided, pathologically, into primary and secondary cases. The secondary cases are generally those infected from the lungs, from the intestines and from the mesenteric lymph nodes. 4. Where the lung or any important organ is the primary cause, the prognosis is that of general tuberculosis, and laparotomy is seldom of any use. This class includes those in which there are tuberculous ulcers of the intestine. In some cases of tuberculosis of the mesenteric lymph nodes, laparotomy may be indicated in the treatment, and where the tuberculosis is primary in the peritoneum it is generally indicated and often followed by cure. 5. A distinction should be made between those primary cases in which there are many thick adhesions and advanced tuberculous lesions not accompanied by the presence of much fluid, and those in which the tuberculosis is represented by miliary tubercles of the peritoneum with ascites. In the first class although the prognosis is not so good as in the second, still laparotomy should be performed. The second class is most promising for recovery. He reports briefly half a dozen cases and advises exploratory laparotomy as safer in many cases than the non-operative course.

73.—See abstract in The Journal of October 4, p. 851.

75.—See The Journal of October 11, p. 916.

76. **The Recurrence of Cancer After Hysterectomy.**—Cushing reports a case of secondary operation for cancer recurrence after complete hysterectomy, giving the details of his method. The result apparently was good and he believes in such cases such operation as here reported will be found feasible and many unfortunate women be saved or greatly relieved. The patient is often in a better condition physically than at the time of the first operation and the disappointment in finding that the previous surgical interference has been in vain is doubly cruel and intolerable. He gives the details of his case in which one of the ureters was severed and re-united by the Van Hook method. In any future similar opportunity he will unite the ureter over the catheter, passing it down through the distal portion of the severed ureter into the bladder and out through the urethra, and slip the upper end of the catheter into the proximal end of the ureter, uniting the ends carefully over the catheter, which can safely remain in place for a week or more.

85. **Spinal Anesthesia.**—Weber describes the methods and states what he considers the indications for this method of anesthesia. He has found it satisfactory for all operations on the limbs and in the perineum, for groin operations and for plastic vaginal work. Vaginal hysterectomy and adnexa operations through the vagina can be better done under general anesthesia, he thinks, but bladder operations are all feasible under this method. In intra-abdominal work he would prefer general anesthesia for many reasons. The spinal anesthesia might not extend sufficiently high, and nausea and vomiting might cause protrusion of the bowel and serious embarrass-

ment. It may be difficult to keep the patient in the Trendelenburg position, but if general anesthesia is contra-indicated or impossible, spinal anesthesia might be tried. He thinks this method in the future will find its greatest field in obstetric work and it may be used occasionally for operations high up in the body, though thus far such operations with it are exceptional. Its merits are that it saves an assistant; kidney disease is no contra-indication nor is chronic or acute bronchitis. It is practicable in hard drinkers where general anesthesia may be impossible and in cases of patients that suffer from shock or hemorrhage, and, therefore, bear ether and chloroform badly. In myocardial disease he thinks it has no special advantage over ether narcosis, excepting when myocarditis is associated with lung or kidney disease. The objectionable features are the fussiness of the injection, the nausea and vomiting which occur in about one-half of the cases, and the consciousness of the patient during the operation. As regards the mortality, he thinks that it is hardly possible to determine this for lack of more experience, but it has been used for many operations on feeble, old, diseased individuals who would have given a high mortality under any anesthesia, and spinal anesthesia was used for this very reason. The deaths, if indeed they were due to spinal anesthesia, were due to the cocain and not to the method of administration. If we could have a substance that does not have the selective poisonous action on the centers in the medulla that cocain has, this would be obviated.

86. **Mammary Substance in Uterine Fibroids.**—Crouse has employed mammary gland extract in several cases of fibroids which he reports, and finds that it controls menorrhagia, metrorrhagia, and dysmenorrhea and in properly selected cases where the myomatous feature predominates, reduces the size of the growth. He compares its employment with various other remedies and operations and finds no bad effects except contractile pains in the tumor when given in maximum doses, which subside when the remedy is stopped or dosage reduced. He concludes his paper with letters from Dr. Shober, the introducer of the remedy, and Dr. Pryor in favor of the method.

88. **Puerperal and Gestational Paralyses.**—Aldrich reports several cases briefly that he has observed himself and discusses the others in the literature. He thinks the neuritis causing the paralysis may possibly have some toxemia as a cause and be the direct result of poisoning from the blood laden with the effete matter from the failure of an established ratio between production and elimination of the poisonous emanations of the two individual organisms. Of course, some cases may be accounted for by supposing pressure or strain on the arterial trunks or on the nerves themselves, and isolated paralysis of the nerves of the upper extremities when immediately following labor may be due to injury of the nerve by ill-directed muscular effort during labor or faulty position of of the member while under anesthesia. Central paralyses are rare, that is, those due to direct injury to the brain, and may often be considered as merely coincidences. The lesion may be embolic, originating from the dislodgement of a small bit of fibrin or a fragment of a clot of blood from one of the uterine sinuses. Cases of extensive polyneuritis have been found to follow septic labors and be due to degeneration of the nerve tissue itself or septic inflammation. They may take the general form of the ascending type, closely resembling Landry's paralysis.

89. **Cystic Degeneration of the Ovaries.**—After reviewing the literature on the subject, Goldspohn concludes that the weight of authority is in favor of the retention-cyst theory, and that the condition is most generally the result of inflammatory processes, evidences of which are usually present in other parts of the ovary or in its surroundings. In scores of cases he has been able to observe the following succession of events: "1. Bimanual examination or compression of an ovary, directly exciting or aggravating a pain, mostly in the inguinal region, loin, or hip, or in a limited intercostal area of the same side, and much more frequently on the left than the right side. 2. Removal of one or more of these follicle cysts by exsection and closure of the gap. Sometimes also an incidental improvement in the location of the ovary, as when operating for retroversion of the uterus. 3. An immediate, occasionally a gradual, but permanent cessation of the pain. These events, occurring in the same succession in, say, seventy-five similar cases, must have more than the mere *post-hoc* relation to each other in the majority of cases. Nor can the results be accounted for, among sensible men, by the old platitude of the mere suggestive effect of an operation."

95. **Cirrhosis of the Liver.**—Edwards' article is largely a discussion of the literature and of the classifications that have heretofore been adopted. The one which he offers is attempted rather with the view of including the principal conflicting clinic and pathologic divisions than of being an infallible and strictly scientific arrangement of the varieties of cirrhosis of the liver. It is as follows:

I. CAPSULAR CIRRHOSIS—ALSO KNOWN AS GLISSONIAN OR LYMPHATIC CIRRHOSIS.

(*a*) Chronic perihepatitis: isolated or part of a chronic peritonitis:

(*b*) Portal vein syphilis (also vascular in origin).

II. VASCULAR CIRRHOSIS.

(*a*) *Hepatic Vein.*—1. Stasis cirrhosis (cyanotic induration). 2. Cirrhosis in (3) or Laennec's cirrhosis, also, Brieger and Sabourin's, known as bivenous cirrhosis.

(*b*) *Portal Vein.*—3. Laennec's cirrhosis or atrophic. First stage, pseudohypertrophy. Second stage, atrophy. 4. Hypertrophic alcoholic cirrhosis, like Laennec's, only remaining large; fatty cirrhosis. 5. Cirrhosis from portal vein syphilis and from pylethrombosis.

(*c*) Arteriosclerotic cirrhosis.

III. BILIARY CIRRHOSIS.

(*a*) Obstruction. "Retentions icterus" and cirrhosis.

(*b*) Biliary or hypertrophic in French sense. 1. With icterus. 2. Without icterus. Hanot's cirrhosis.

IV. MIXED CIRRHOSIS.

Vascular (II) and Biliary (III) varieties combined.

97.—See abstract in THE JOURNAL, xxxviii, p. 530.

98.—Ibid.

107. **Fractures of the Patella.**—This article of Courtney's is an argument for the value of treating patellar fractures in selected cases by opening the joint and suturing. He thinks the treatment is practically without danger if properly carried out, and will result in almost perfect restoration of function and anatomy. Where a practitioner can not meet all the conditions necessary to the perfect treatment of a fractured patella, he will best serve his client's interests and his own reputation, by transferring the case to a thoroughly competent surgeon.

108. **Puerperal Eclampsia.**—Rothrock reviews the theories of puerperal eclampsia and calls attention particularly to the importance of thorough urinary analysis, including not merely the detection of albumin, but also the amount of urea which he finds to bear no relation to the degree of albuminuria. He thinks the test should be a part of the routine practice and that every possible test to determine the renal insufficiency should be employed. In examining for urea the quantity eliminated in cases of insufficiency varies greatly at different times so that it is absolutely necessary to estimate from the twenty-four-hour collection.

109. **Position of the Uterus.**—Robinson's article is an anatomical study of the position of the uterus in all its modifications.

110. **Requirements of Sanitation.**—Bracken sums up the propositions in this paper in the following: "1. In dealing with sanitary problems the physician should be a leader. 2. In villages and cities there should be sanitary organizations, having in their membership lay representatives as well as physicians. 3. In country districts the sanitary problems should be under the strict supervision of a county health officer acting in conjunction with the various township health officials and

the State Board of Health. 4. The county health officer should be a physician of good standing among his fellow practitioners, and should receive a reasonable compensation for services rendered. 5. The Minnesota State Sanitary Association should have full representation from the various county, city and village organizations."

112. **Intestinal Anastomosis.**—Three cases treated by suture are reported by MacLaren, who discusses the various methods of operation. He does not favor the general use of the Murphy button, but it is of special use in operations in certain parts of the bowel, for instance, such as the duodenum, in certain circumstances in the ileocecal region of the stomach, but particularly in the lower segment and rectum. For intestinal suture he favors the Connell mattress suture, which he thinks is the best one yet offered. The only objection is that the suture line might be infected by contact of the suture material with the intestinal mucous membrane during the suturing and tying of the knots. The last one or two sutures are hard to place, and the first time he tried it, he put in three single Lembert sutures to complete the closure. He has used it five times, three of the cases being here reported, of which two made a good recovery.

116. **Electricity and Life.**—Clements reviews the experiments reported by Loeb and Matthews from a vitalistic standpoint and sums up that the experiments are of a limited and fragmentary kind, comparatively, using only a few very low forms of life and only isolated or segmentary parts of life phenomena being manipulated. None of the experiments have to do with the specifically ultimate life processes in their causation and initiation; merely vital operations already in force are influenced, and the results and conclusions, while interesting and of value, do not touch the problem of life itself. It is puerile, therefore, to speak of the establishment of the identity of electricity and life by any such experiments and discoveries as these.

117. **High Myopia.**—Sherer favors operation in myopia of sufficient degree to embarrass the individual in his social and business relations, in progressive cases and where serious symptoms ensue. He would perform discission alone before twenty years of age, and after that discission and extraction may be necessary. He thinks in favorable cases and in skilled hands the danger is trifling, but especially in older persons, complications should be watched for.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), September 27.

1 *A Discussion on the Pathology of Nerve Degeneration. Frederick W. Mott and others.
2 Cinematograph and Lantern Demonstration upon Nervous Diseases in the Lower Animals. Chalmers Watson.
3 A Note on the Condition of the Central Nervous System in a Case of African Lethargy. W. B. Warrington.
4 *A Discussion on the Place of the Bacteriological Diagnosis in Medicine. G. Sims Woodhead and others.
5 *An Inquiry into the Influences of Soil, Fabrics, and Flies in the Dissemination of Enteric Infection. R. H. Firth and W. H. Horrocks.
6 Case of Arrested Development of the Cerebellum and Its Peduncles; with Spina Bifida and Other Developmental Peculiarities. Keith Monsarrat and W. B. Warrington.
7 *A Discussion on the Relationship of Human and Bovine Tuberculosis. D. J. Hamilton and others.
8 Rheumatic Myocarditis. Theodore Fisher.
9 A Discussion on the Fetal Bone Diseases. J. W. Ballantyne and others.
10 Bilharzia Hematobia in Cyprus. G. A. Williamson.
11 Contribution to the Study of B. Pestis: Its Cultural and Morphological Characters, and Its Relation with B. Pseudo-Tuberculosis Rodentium. Bruno Galli-Valerio.
12 Statistics of the Blood Examination in Cases of Malaria in Cyprus During a Period of Twelve Months. G. A. Williamson.
13 Remarks Concerning the Nomenclature, Etiology and Prophylaxis of the Intermittent Fevers. L. W. Sambon.
14 *The Leucocytes in Malaria. C. H. Melland.
15 A Simple and Effectual Method of Sterilizing Catgut. A. W. Mayo Robson.

The Lancet (London), September 27.

15 Some Morbid Conditions of the Mouth. Edmund W. Roughton.
16 The Radical Treatment of Chronic Intestinal Tuberculosis, with Suggestions for Treatment in More Acute Disease and in Tuberculous Peritonitis. A. W. Mayo Robson.
17 Clinical Remarks on Some Tumors of the Anterior Abdominal Wall. Fred D. Bird.
18 The Recent Cholera Outbreak in Canton, South China. W. J. Webb Anderson.
19 Some Cases of Chronic Pancreatitis. B. G. A. Moynihan.
20 Pythogenic Pneumonia. A. H. Copeman.
21 *On Two Cases of Paralysis Complicating Gonorrhea. T. R. Glynn.
22 Operations Under Analgesia Produced by Intraspinal Injections of Cocain. H. Littlewood.
23 Leucocyte Enumeration for Routine Work. William G. Savage.
24 Buphthalmos, or Congenital Hydrophthalmos. George Wherry.
25 A Note on Syphilis in Relation to Life Assurance, with an Examination of 500 Consecutive Claims. F. Parkes Weber.

Journal of Tropical Medicine (London), September 15.

26 Remarks on the Nomenclature, Etiology, and Prophylaxis of the Intermittent Fevers. Louis W. Sambon.
27 The After-Complications in the Operative Treatment of Cataract. R. H. Elliot.

Archives de Neurologie (Paris), September.

28 General Paralysis at Moscow Clinic of Mental Diseases. S. Soukhanoff.—La paralysie gén. d'après les données de la clin. psych. de l'Université de Moscou.
29 *Depression in the Cornea Accompanying Serious Injury of the Brain. R. Pallias.—Dépression kératique et états encéphalopathiques graves.
30 Une observation de sein (breast) hystérique. Viallon.
31 Transactions of XII French Congress of Neurologists and Alienists. Grenoble, August 1.

L'Obstetrique (Paris), vi, 5.

32 Childbirth in Case of Rachitic Pelvis. J. L. Valenzy.—De l'accouchement dans les bassins rachitiques. Statistique et pronostique.
33 *L'infection puerpérale à la Clinique Tarnier. Perret.
34 *Quelques observations d'infection puerpérale à forme septicémique traitée par les abcès de fixation. H. Chéron.

Semaine Medicale (Paris), September 17.

35 Danger of Dissemination of Hydatid Cysts from Rupture or in Operating on the Mother Cyst. J. Chelnisse.—Des kystes hydatiques multiples de la cavité abdominale par greffe echinococcique.

Berliner Klin. Wochenschrift, August 18.

36 Prevention of Ophthalmia Neonatorum by Credé's Method. G. Leopold.—Zur Verhütung der Augenentzündung der Neonat. durch Credéisirung.
37 *Connection between Joint Formation in the First Costal Cartilage and the Healing of Pulmonary Tuberculosis. W. A. Freund.—Gelenkbildung am ersten Rippenknorpel.
38 Zur Prognosis der Meningitis tuberculosa. A. Gross.
39 Entire Catheter Slipped from Physician's Hand into Bladder. Von Brunn.—Zur Kenntniss von den Fremdkörpern der Harnblase.
40 Squint Operation for Congenital Paralysis of Rectus. F. Schoeler.—Ueber die Schieloperation bei ang. Lähmung des Musculus rectus externus.
41 (No. 34.) What is Bovine Tuberculosis? J. Orth.—Was ist Perlsucht?
42 Lysol Intoxication. Tausch.—2 Fälle von Lysolvergiftung.
43 Beitrag zur Differenzierung von Typhus-, Coli- und Ruhr (dysentery) Bacillen. M. Klopstock.
44 (No. 35.) *Venous Congestion in the Face Early Sign of Progressive Paralysis. E. von Nissl.—Ueber Stauungserscheinungen im Bereich der Gesichtsvenen bei der prog. Paralyse.
45 Ueber die quantitätiven Beziehungen von Amboceptoren, Complement und Anticomplement. J. Morgenroth und H. Sachs.
46 Beitrag zur Chirurgie der Gallenwege (biliary passages). O. Zeller.
47 Relations between Anemia and the Alimentary Canal. H. Strauss.—Zur Frage der Beziehungen zwischen perniciöser Anämie und Magendarmcanal. (Commenced in No. 34.)
48 *Metabolism in Tuberculous Subjects. Mircoli and Soleri.—Ueber den Stoffwechsel bei Tuberculösen. (Commenced in No. 34.)

Centralblatt f. d. Grenzgebiete der Med. u. Chir. (Jena), V.

49 (No. 15.) *Cephalic Tetanus. H. Neumann.—Der Kopftetanus. Critical Review. (Commenced in No. 13.)
50 (No. 16.) *Syphilitic Affections of Intestines. A. Weiss.—Die syph. Erkrankungen des Darmes. Critical Review. (Commenced in No. 15.)
51 (No. 17.) *Obstetric Paralyses of Upper Extremity in Children. E. Stransky.—Ueber Entbindungslähmungen der oberen Extremität beim Kinde. Critical Review. (Commenced in No. 15.)

Deutsche Med. Wochenschrift (Berlin and Leipsic), xxviii.

52 (No. 37.) Alkohol und Sublamin als Händedesinfektionsmittel. Fürbringer and others.
53 *Ueber neurasthenische Neuralgien. E. Jendrassik. (Commenced in No. 36.)
54 (No. 38.) The Diet in Hot Weather. F. Hirschfeld.—Ueber Ernährung in der heissen Jahreszeit und im warmen Klima.
55 *Beitrag zur Bottini'schen Operation. S. Jacoby.
56 *Practical Results of Biologic Blood Test. Uhlenhuth.—Praktische Ergebnisse der forensischen Serodiagnostik des Blutes. (Commenced in No. 37.)
57 Human Chyle. H. Strauss.—Ueber osmotische und chemische Vorgänge am menschlichen Chylus.
58 Legislation in Regard to Meat Preservatives. Strassmann.—Verbot der schwefligen Säure und ihrer Salze.
59 Discussion of Measures to Control Quack Ads. Biberfeld.—Zur Bekämpfung der Kurpfuscherei.
60 Hemoglobinurie und Chinin-Prophylaxe. A. Plehn.

Monatsschrift f. Geb. und Gyn. (Berlin). August.

61 Tuberculosis of Genitalia in Girls. H. Brüning.—Tub. der weibl. Geschlechtsorgane im Kindesalter.

62 Comparative Advantages of Length- and Cross-wise Incision in Cesarean Section. F. Curschmann.—Bietet der quere Fundalschnitt (Fritsch) bei der Sectio ces. gegenüber dem Längsschnitt durch die Corpuswand Vortheile?
63 Gonococcus in Deep Layers of Tube Wall. E. Kraus.—Nachweis von Gonokokken in den tiefen Schichten der Tubenwand.
64 Typhusbacillen in der Tube. J. Koch.
65 Laceration of Uterus During Birth. J. Krebs.—Ueber Gebärmutterzerreissung während der Geburt.
66 Review of Dutch Literature on Obst. and Gyn., 1901-1902. M. M. de Mouchy. (Commenced in No. 5.)
67 Artificial Sterilization of Women. H. Hübl.—Ueber künstliche Sterilisirung des Weibes. Critical Review. (Commenced in July number.)
68 Ueber die Anatomie und Aetiologie der Blasenmole. F. Kermauner. Critical Review.

Muenchener Med. Wochenschrift, September 16.

69 *Evidence of Simulation in Hysterics and Damage Cases. R. v. Hösslin.—Zum Nachweis der Simulation bei Hysterischen und Unfallskranken.
70 *Diagnosis of Hourglass Stomach. J. Decker.—Zur Diagnose der Sanduhrmagen.
71 *Operative Treatment of Hourglass Stomach. A. Schmitt.—Zur chir. Therapie des Sanduhrmagens.
72 *Principles for Treatment of Syphilis. E. v. Düring.—Grundsätze der Syphilisbehandlung.
73 Sublamin as a Disinfectant. M. Blumberg.—Wirkung des Sublamins als Desinfektionsmittel.
74 *Glycosurie und Tabes. E. Meyer.
75 Menstruatio praecox. O. Stömmer.
76 Bicycle Pump in Rectum. Scherenberg.—Fremdkörper im Mastdarm.

Rivista Sperimentale di Freniatria (Reggio nell' Emilia), xxviii, 1.

77 Addresses and Discussions at Eleventh Italian Congress of Psychiatry, September, 1901:
78 *a*. Recent Progress in Neuropathology, Psychiatry and Management of the Insane. Seppili.
79 *b*. Classification of Psychopathies. De Sanctis.
80 *c*. Genesis and Nosography of Progressive Paralysis. Bianchi.
81 *d*. Asylums for the Insane. Tamburini.
82 *e*. Practical Suggestions Which Psychiatry Can Give to Pedagogy. Agostini.
83 *f*. Criteria and Methods for Educability of the Mentally Weak and Unbalanced.
84 Sugli apparati fibrillari endocellulari di conduzione nei centri nervosi dei vertebrati superiori. Donaggio.
85 Sulla paresis labio-glosso-laringea di natura neuronica. (Sindrome di Erb). Ventra.
86 Sugli eredo-pellagrosi (hereditary pellagra). Agostini.
87 Alterazioni anat. e histol. del sistema nervoso nel morbo di Parkinson. Burzio.
88 *Nuove proprietà tossiche e terapeutiche del siero del sangue degli epilettici e loro applicazione pratiche. Ceni.
89 La dieta declorurata nell' epilessia. Cappelletti.
90 Saggi di radiografia stereoscopiche del cranio. Masi.
91 Note ed appunti di anatomia patologica in malatie di mente. Angiolella.
92 L' indice-craniografo. Algometro a puntura. Belloni.
93 Due casi di delinquenza seguita a trauma nervoso. Crisafulli.
94 La ruminazione nella specie umana. Cascella.
95 Di un nuovo ipnotico pei malatie di mente: Cloretone. Cappelletti.
96 Ricerche ergografiche in epilettici. Colucci.
97 *Ulteriore contributo allo studio delle leggi che regolano la ereditarietà psicopatica. Pieraccini.
98 Influenza del lavoro intelletuale prolungato e della fatica mentale sulla respirazione. Obici.

Botkin's Gazette (St. Petersburg), February 27 to August 7.

99 (Nos. 9 and 10.) Effect of Steam Disinfection on Certain Physical Properties of Fabrics. P. A. Patzanovski.—O vliyanii parovoi dezinfektzii.
100 Atropin in Intestinal Obstruction. E. Diatchenko.—O primyenenii atropina pri neprokhodimosti kishek. (Concluded from No. 8.)
101 (No. 14.) *Hemorrhage from Mesenteric Gland in Typhoid Fever. M. I. Rostovtzeff.—Slutchai oslozhneniya tipha krovotetcheniem iz bryzhetchnoi zhelezi.
102 (No. 16.) Four Cases of Congenital Cerebral Hernia. V. P. Zhukovski.—4 Slutchaya vrozhdennykh mozgovyykh gryzh. (Commenced in No. 12.)
103 *Cardial Asthma and Allied Conditions. L. V. Popoff.—O serdetchnom udushye. (Commenced in No. 9.)
104 (No. 17.) Study of Specific Immunizing Substance in the Blood in Typhoid Fever. N. N. Georgievski.—O vremeni poyavleniya specifitcheskova immunizir. veshtchestva v krovi pri bryushnom tiphye.
105 (No. 18.) Secretion of Intestinal Juice. V. O. Savitcha.—Otdyelenie kishetchnova soka.
106 (No. 20.) Effects of Unilateral Nephrectomy. L. A. Soboleff.—O poslyedstviyakh ekstirpatzii odnoi potchki dlya organizma. (Commenced in No. 15.)
107 Ophthalmologic Casuistic. A. S. Tchemolosoff.
108 (No. 22.) Study of Osmosis of Red Corpuscles in Certain Pathologic Processes. G. F. Lang.—O pritchinakh novysheniya osmotitcheskoi stoikosti krasnykh krovyanykh tyeletz pri nyekotorykh pat. protzessakh.
109 Spontaneous Rupture of the Heart. B. P. Rutchinski.—Samoproisvolnyi razryv serdtza. (Commenced in No. 21.)
110 (No. 24.) Differentiation of Extragenital Pregnancy. V. Fedoroff.—O raspoznavanii vnyematotchnoi beremennosti.
111 K etiologii noma. O. P. Korsh.
112 Pharmacologic Experiments on Isolated Heart of Warm-Blooded Animals. N. I. Botcharoff.—Pharm. opyty nad isolirovannym serdtzem.
113 The Campaign Against Malaria. V. Kashkadamoff.—O borbye s malyariei.
114 (Nos. 26 and 27.) Influence of Pilocarpin on Gastric Secretion. I. Tzitovitch.—O vliyanie pilocarpina na secretziu zheludotchnykh zhelez.
115 Effect of Locke's Method of Artificial Nourishment on the Excitability of the Nerve Elements. P. J. Kaufmann.—O vliyanii iskusstvennova pitaniya, po sposobu Lokka, na vozbydimost nervnykh elementov.
116 (No. 28.) *Intestinal Worms in Etiology of Appendicitis. M. I. Rostovtzeff.—Rol kishetchnykh glist v etiologii perityphlita.
117 *Stab Wounds of Thorax. B. K. Finkelstein.—O pronikayushtchikh koloto-ryesanykh ranakh grudnoi polosti. (Commenced in No. 19.)
118 (No. 29.) Ankylosis of the Spine. P. Ostankoff.—Ob oderevenyelosti pozvonotchnika (forma Bechterewa) i o chron. ankyloziruyushtchem yevo vospalenii (forma Strumpell-Marie).
119 *Are Helminths Concerned in Etiology of Appendicitis? S. S. Virsaladze.—Imeyut li glisty etiolog. snatchenie pri appendicit'ye?
120 (No. 30.) Epidemic of Typhoid. S. Unterberger.—Typhoznaya epidemiya v Tzarskom Selye.
121 *Hemolytic Power of Serum During Digestion. V. I. Glintchikoff.—Ob izmyenenii hemolytitcheskoi sily krov. syvorotki v razlitchnya phazy pishtchevareniya.
122 (No. 32.) Dermatol as an Antidiarrheic. P. S. Falkner.—D. kak protivoponosnoi sredstvo.

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123 (No. 4.) Nomenclatura de las causas de defuncion. J. de Salterain.
124 (No. 6.) *Localizacion palpebral del catarro primaveral. L. Demicheri.
125 Gunshot Wound with Double Perforation of Urethra in Child. Spontaneous Recovery. P. Pena.—Herida de bala en el abdomen con perforacion de la uretra.
126 Purpura hemorrhagico de origen tifico. L. Morquio.
127 (No. 7.) *Sobre quistes hidaticos del cerebro. L. Morquio.
128 Acrodermatitis supurativa. J. B. Foresti.
129 2 casos de paralisis del musculo oblicuo superior consecutiva a la trepanacion del seno frontal. M. Quintela.
130 Inversion uterina infectada. E. Pouey.

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1. **Nerve Degeneration.**—Mott considers especially the chemistry of degeneration. The first attempt which he made was by estimating the amount of phosphorus in the two halves of the spinal cord in which unilateral or nearly unilateral degeneration had resulted in recent cerebral lesions. He found that on the side on which the Marchi reaction of degeneration occurred, as shown by microscopic examination, less phosphorus was yielded and came to the conclusion that it depended on the splitting up of the complex phosphoreted fat lecithin into smaller bodies such as cholin, glycerophosphoric acid, and stearic or oleic acid. The cholin and glycerophosphoric acid escape into the blood, and the nonphosphoreted fatty substance is left behind and is blackened by the action of osmic acid. At first he was led to believe that cholin might be a toxic agent in rapid degenerations, such as general paralysis, and he made a number of observations as to increase of cholin in the blood and in the cerebrospinal fluid of a large number of cases of this disease and found it proportionately greater. The examination of tissues by the Marchi method showed abundant recent degeneration, but he soon found that this was not peculiar to paresis. It also occurs in beri-beri, alcoholic neuritis, sclerosis of various forms, etc. It then occurred to him and his collaborator, Professor Halliburton, that they could experimentally show the association of the successive changes in the histology of the degeneration of nerves with the disappearance of phosphorus, increase of water in the nervous system, appearance of cholin in the blood, by associating histologic observations on the degenerating nerves with chemical analyses and physiologic and chemical tests. For this purpose the sciatic nerves were divided and the animals allowed to live various periods of time, and the amount of phosphorus and water estimated in the degenerated and regenerated nerves. The blood was examined by the chemical and physiologic tests for cholin and the results correlated with systematic examination of the nerves by the Marchi method. Mott gives the details of the tests for cholin with platinum chlorid. In undertaking the examination of the nerves he came to the conclusion that the neurilemmal sheath plays an important part in regeneration; the cells of the sheath undergo proliferation, and take part, both in the formation of new protoplasmic basis out of which the fiber is developed, as well as in the absorption of the products of degeneration. He does not think the claim supported that if degeneration takes place from the periphery the neuron theory is vitiated, for there is no doubt that degeneration, whether primary or secondary in origin, ceases at the termination of the axons of the cells from which they proceed, and pathologic data all favor the nutritional dependence of the

axon on its connection with the cell of origin. The experiments made by himself and Halliburton support the neuron theory. He has experimented by dividing the posterior roots and observing the regeneration of the divided nerves. While the observations are incomplete they show the following facts: That frequently there is an anastomosis of the median and ulnar nerves in monkeys, and that therefore after section of the ulnar nerves apparently there is no motor functional impairment. That on the side in which the posterior roots have been divided, and the ulnar nerve divided and sutured, regeneration of the motor fibers does not take place so rapidly as on the other side, for stimulation of the nerve with a moderate current gave a response on that side, whereas stimulation with the strongest current on the side which was desensitized and paralyzed by section of the posterior roots, gave no response. He says: "We know that the sensory nerve endings, for example, pacinian and tactile corpuscles, persist after section of the nerve. They are, therefore, capable of receiving stimuli; if the sensory nerves are regenerated before the motor, regeneration will take place along the line of the incoming stimulus, and this molecular vibration may tend to vivify the protoplasmic basis, which has been laid down by the cells of the neurilemmal sheath; and the passage of the stimulus may lead to myelination occurring, for we have many reasons for believing that myelination does depend upon the passage of stimulus. It is not, however, until the connection of the upper segment of the divided nerve with the lower takes place that the stimuli can produce any reflex or conscious effect. We can thus see that if this hypothesis is true, sensory nerves may become myelinated and regenerate independently of connection with the central cell of origin, the receiving and transmitting apparatus being present; but not so with the motor nerves."

4. **Bacteriologic Diagnosis.**—Woodhead has made some 27,000 cultures, of which he has tabulated nearly 25,000 from over 12,000 patients, and from this study concludes that the value of bacteriologic examination with all its limitations is, as a rule, under rather than over estimated. Of course bacteriology is only an aid to diagnosis, and sometimes too much is expected of it, and frequently there is no explanation accompanying the specimen requiring to be examined, and because one is unwilling to give an opinion under such circumstances, bacteriologic methods are denounced. He notices the occurrence of diphtheria bacilli in the throats of healthy persons, and remarks that a single examination is not sufficient in this disease. One would naturally expect to find the mixed infection giving the highest percentage of mortanty, but he found that as the typical long form was departed from, the mortality decreases. In cases in which the practically pure cultivations of the typical long bacillus are obtained the mortality is 21.4 per cent.; when the long form is mixed up with the short bacilli, the mortality falls to 20.1 per cent.; when with short and irregular forms only, to 18.6 per cent.; and when with irregular forms only, to 14.6 per cent. He has found also that the streptococcus complicating diphtheria infection does not increase the mortality as much as the staphylococci as the complicating organism, which was by far the most fatal. He also discusses the relation of diphtheria and scarlet fever, and finds many cases reported as the latter undoubtedly diphtheria. It is also true that in a large number of cases reported as diphtheria no diphtheria bacilli can be found, and they are not cases of diphtheria at all. In scarlet fever uncomplicated with diphtheria or streptococci, therefore, not treated with antitoxin, there was a somewhat high mortality. Bacteriologic studies show that the needed period of isolation after diphtheria is much longer than was at one time thought, and the majority of his cases seemed to retain the bacilli in their throats from two to nine weeks after apparent convalescence. In conclusion he mentions the value of serum diagnosis, especially in doubtful cases. A Boer prisoner of war in Ceylon has maintained that he has been able to determine that a certain bacillus cultivated by him in fish broth is the bacillus of leprosy, because the serum from the leprous patient, when mixed with a culture, brings about marked degenerative changes in this bacillus, and this opens up a vista of great possibilities.

5. **Soil, Fabrics and Flies in Enteric Infection.**—Firth and Horrocks have experimented with various samples of fabrics and with different soils as to the vitality of the typhoid germ and from their experiments draw the following conclusions: "1. That there is no evidence to show that the enteric bacillus, when placed in soil, displays any disposition or ability to either increase in numbers or grow upward, downward or laterally. 2. That the enteric bacillus can be washed through at least eighteen inches of soil by means of water, even when the soil is closely packed down and no fissures or cracks allowed to exist. 3. That the enteric bacillus is able to assume a vegetative existence in ordinary and sewage polluted soil and survive therein for varying periods, amounting in some cases to as much as seventy-four days. 4. That the presence or absence of organic nutritive material in the soil appears to be a largely negligible factor, since the enteric bacillus can survive in a soil indifferently well, whether it be an organically polluted soil or a virgin soil, and whether it receive dilute sewage or merely rainwater. 5. That an excess or great deficiency of moisture in soils appears to be the dominant factor affecting the chances of survival of the enteric bacillus in, or at least the possibility of recovering it from soil. 6. That from fine sand allowed to become dry, the enteric bacillus can be recovered on the twenty-fifth day after inoculation. 7. That from fine sand, kept moist with either rain or dilute sewage, the enteric bacillus can not be recovered later than the twelfth day after fouling; this inability to recover the organism is due probably not so much to its death as to its being washed down into the deeper sand layers by liquids added. 8. That in peat, the enteric bacillus appears to rapidly die out, as the microbe can not be recovered from it after the thirteenth day; but this soil is so porous that it is quite possible that the micro-organism was washed down into the deeper parts and consequently not recoverable from the place of inoculation. 9. That from ordinary soil kept damp by occasional additions of rainwater the enteric bacillus can be recovered up to and on the sixty-seventh day. 10. That from a similar soil kept damp by occasional additions of dilute raw sewage, the enteric bacillus is recoverable up to the thirty-fifth day. 11. That from a similar soil kept damp by occasional additions of dilute sterile sewage the enteric bacillus is recoverable up to the seventy-fourth day. 12. That in a similar soil, after heavy rainfall, the enteric bacillus at once disappears from the surface layers. 13. That from a similar soil, allowed after inoculation to become so dry as to be readily blown about as dust, the enteric bacillus can be recovered up to and on the twenty-fifth day; and that enteric infective material can be readily translated from dried soil and sand by means of winds and air currents. 14. That in a sewage-polluted soil recovered from beneath a broken drain, the enteric bacillus is able to survive up to the sixty-fifth day. 15. That from a piece of khaki drill, inoculated with an emulsion of the enteric bacillus and then allowed to become quite dry, the micro-organism is recoverable up to and on the seventy-fourth day. 16. That from a piece of khaki serge, similarly treated, the enteric bacillus is recoverable on the seventy-eighth day. 18. That from a piece of khaki drill fouled by liquid enteric feces and then allowed to dry, the micro-organism is recoverable on the seventeenth day. 19. That from a similar fabric fouled by solid or semi-solid enteric feces and then allowed to dry, the micro-organism is recoverable up to the ninth day. 20. That the enteric bacillus is able to survive in surface soil an exposure to 122 hours of direct sunshine, extending over a period of twenty-two consecutive days. That from a piece of infected serge the enteric bacillus is recoverable after the fabric has been exposed to fifty hours of direct sunshine spread over a period of ten days. 21. That ordinary house flies (*Musca domestica*) can convey enteric infective matter from specific excreta or other polluted material to objects on which they may walk, rest or feed. That such infective matter appears to be attached not only to their heads (mandibles probably) but also to their legs, wings and bodies. It has not been proved that the enteric bacillus passes through the digestive tract of the fly." They deduce a number of practical conclusions from

70. **Diagnosis of Hourglass Stomach.**—Decker has had two patients recently present the symptoms of hourglass stomach. The pain is significant in differentiating. It differs from the pain of an ulcer in that it lasts longer and is not so much the pain of spasmodic contraction but rather a sensation of distension as when the stomach is filled too full of carbon dioxid. It does not subside after vomiting, but persists half an hour longer. The only means of relieving it in his cases was restriction to fluid food and limitation of the amount. The pains also recurred when the patient resumed a sitting or standing posture after reclining, or when more solid food was taken. After the pains have subsided in case of an ulcer, they do not recur immediately when the patient stands up and takes more solid food. Only small amounts are vomited at a time in case of hourglass constriction. The presumptive diagnosis becomes a certainty when in rinsing the stomach the water returns clear at first and then suddenly fragments of food appear, or when the water introduced vanishes and does not return. To confirm this phenomenon it is advisable to pour in two funnelfuls of water. Another point in differentiating is the hourglass shape of the inflation when the stomach is filled with air or carbon dioxid. This is especially significant when the cardial portion becomes inflated first, and the pylorus portion not until later. Radioscopy is also useful, but the most valuable of all tests is the gurgling sound when one half of the stomach is pressed, and its absence when the pressure is applied to the constricted portion. He concludes by warning against attributing to mere nervousness the symptoms observed in such cases. The condition entails nervous disturbances and they vanish with the removal of the cause. He also suggests that the stomach must be rinsed with the subject sitting or standing, as when reclining the above described signs may prove misleading.

71. **Surgical Treatment of Hourglass Stomach.**—In two of the three cases reported by Schmitt posterior retrocolic gastroenterostomy was performed. In the other, a gastroplastic operation, and ten months later a posterior gastroenterostomy. All were cured. The detaching of the organ from adhesions, etc., is an important part of the procedure. He states that the condition occurs more frequently than is generally recognized and is frequently overlooked in abdominal operations. When congenital the stomach adapts itself to the condition, and it causes little if any trouble.

72. **Principles of Treatment of Syphilis.**—Düring is in charge of the campaign against syphilis instituted in Asia Minor by the Sultan as described in detail in The Journal of July 5, p. 28. He has also had peculiar opportunities for close observation of syphilitics. His experience has convinced him that syphilis can be successfully treated in certain cases by much smaller amounts of mercury than ordinarily employed. He is also convinced that the connection of tabes with syphilis is in many cases merely the oversaturation of the enfeebled organism with mercury. He contends that the practice of treating syphilis internally, prescribing pills of some mercurial preparation, is disastrous, as too frequently the patient continues to take the pills far more copiously and for longer periods than the treating physician intended. Syphilitics can be grouped in two classes, he remarks, 1, those who recover with very little mercury, and are objectively and subjectively sound, with healthy children, like many of his patients in the foreign colony, whom he meets almost daily, and 2, those who for some reason, either constitutional or in their mode of life, prove more or less refractory to treatment. His experience also corroborates the fact that treatment and hygiene have a tendency to prevent the development of tertiary symptoms. Also that other factors, anemia, neurasthenia, fever, alcohol, irregular mode of life, mental overeffort, worry and excitement are important factors in the development of tertiary symptoms. He makes a practice of waiting before instituting treatment, until the diagnosis is beyond question, except in the rare cases of unusually severe onset. He uses the salicylate of mercury and commences with two injections a week of .08 to .1 gm. He and his aids have made more than 100,000 of these injections in the last six years and have never had a mishap. There was embolism of paraffin in two cases, but it subsided spontaneously without disturbance in twenty-four hours. He continues the injections until all symptoms have disappeared and for a week or so longer. He emphasizes the importance of Turkish baths as an adjuvant to mercurial treatment, and states that he prefers for local treatment of the mucosæ a 2 to 20 per cent. solution of chromic acid, neutralized at once afterward with a saturated solution of sodium bicarbonate. In the second month after the injection treatment has been commenced the patient takes .5 to 1 gm. potassium iodid and is required to return at the end of the month. If found in good condition he is dismissed with instructions to return every fortnight to be inspected. If there are no further symptoms another course of treatment is instituted at the close of the third month, with half the previous doses. This system is continued, increasing the intervals between treatment. In the second and third year one or two courses are sufficient. If some symptom develops immediately after one of the courses of treatment, he applies some local measure, trusting to its spontaneous subsidence, and he has rarely been disappointed. If the symptom is serious, an iritis for instance, he resumes treatment at once with great energy until it is conquered. He says that there is scarcely a single case of tabes or general paralysis to be found among the thousands of syphilitics in Asia Minor and Bosnia.

74. **Glycosuria and Tabes.**—In Meyer's case the elimination of sugar remained essentially the same, irrespective of the carbohydrates ingested, suggesting that the case was not one of a disturbance in the metabolism but that the elimination of sugar was regulated from some point beyond the reach of dietetic influences. The tabes was associated with a bulbar affection, and the glycosuria was probably the symptomatic expression of a tabetic nuclear affection on the floor of the fourth ventricle, similar to and therefore to a certain extent a tabetic puncture.

88. **Successful Serum Treatment of Epilepsy.**—See The Journal of March 29, p. 843.

97. **Laws of Psychopathic Heredity.**—Pieraccini reports that 1958 inmates of 32 different insane asylums in Italy belong to only 889 families. These 1958 insane subjects include 1064 men and 894 women, and they form 1058 groups or sets of relatives. There are 10 groups of grandparents and one or more grandchildren; 257 groups of parents and children; 488 of brothers and sisters; 153 of aunts or uncles and nephews or nieces and 150 of cousins. Study of these groups shows the predominance of crossed heredity; that the maternal inheritance is the most baneful, and that men seem to be more predisposed to insanity than women. Also that the difference between the age at which a grandparent became insane and that at which the grandchild was affected is marked by an average interval of 44 years; parents and children, by an interval of 23 years, and uncles and nephews, 16 years. The danger of the younger generation becoming insane decreases as the younger subject approaches the age at which the older member of the family became affected, and once past it all danger ceases. There was not a single case in the entire list in which a younger relative had become insane after he had passed the age at which the older member of the family was affected. Another fact impressed on him by these statistics is the absolute fatality of the doom of insanity in the descendants. He thinks that the mental disease should be attributed exclusively to some congenital origin, and not to the external causes to which it is usually ascribed. He also calls attention to the similarity of the mental inheritance. The psychopathies were alike in the majority of cases. In some of the groups mania occurred in one member and lipemania in another, which proves, he thinks, the identical nature of these widely diverse syndromes, both the expression of chronic maniaco-depressive mental disease. The forms of psychopathy known as degenerative were frequent in the descendants: mania in 232 and melancholia in 25. These forms of mental disease should be regarded as constitutional manifestations of hereditary degeneration, not as the expression of a psychoneurosis. The incurable character of family insanity is shown by the fact that of the total only 9 were cured and 67 died in chronic insanity.

101. Hemorrhage from Mesenteric Gland in Typhoid.—Rostovtzeff reports the second case on record of this complication of typhoid fever. In both cases the hemorrhage occurred in or from a gland near the appendix and deceptively simulated appendicitis.

103. Cardiac Asthma and Allied Conditions.—Popoff does not regard cardiac asthma as a morbid entity. It has varied sources and diverse clinical manifestations, and may be due to changes in cardiac action or it may be of vascular origin. Cardiac asthma proper may be the result of either weakened or augmented heart action, and is characterized by active pulmonary congestion. Asthmatic attacks of vascular origin are more frequent and are often associated with aneurisms and arteriosclerosis. Treatment should be carefully individualized.

116 and 119. Helminths in Etiology of Appendicitis.—Both writers attribute but slight etiologic significance to intestinal parasites in appendicitis. Virsaladze found no trace of them in 60 cases examined from this point of view.

117. Stab Wounds of the Chest.—Finkelstein has made an exhaustive clinical study of the subject with the following conclusions: Probing is not always satisfactory, and it is more advisable to enlarge the wound and determine its depth with the eye. In case a rib or cartilage is in the way resection should be resorted to only when there is hemorrhage from an intercostal artery and when the source is otherwise inaccessible. When satisfied that the wound penetrates the pleura, an antiseptic tampon should be introduced into the chest cavity. If there are no contraindications it should be left *in situ* for four or five days. In the cases in which the wound was sutured the procedure proved unmistakably harmful in 50 per cent. Complications should be treated on general principles. In case of hemothorax the chest should be opened with a trocar or by resection of a rib. In progressive emphysema an outlet should be made for the air in the pleura. Large extravasations of blood and pyothorax should receive prompt attention.

121. Hemolytic Power of Serum During Digestion.—Glintchikoff reports experiments which showed that the hemolytic power of the blood serum increases with the progress of digestion. It reaches the maximum between the sixth and ninth hour. Then it gradually decreases to the thirteenth. The rise and fall of this hemolytic power occur with constant regularity. The rise commences to be noticeable at the third hour after a meal. Fats increase it more than meat or mixed food. Bread and milk occupy an intermediate place.

124. Papilloma of the Tarsal Conjunctiva.—Demicheri has observed only 20 cases of this affection, which he calls "spring catarrh," in an experience with 5500 ophthalmic cases. There does not seem to be any relation between it and trachoma, as the latter is comparatively frequent in Uruguay. The lesions were isolated pericorneal hyperplasia in 3 cases, isolated papilloma of the upper lid in 9, and in 8 the complete bilateral type of the affection. An important sign to differentiate it from trachoma is the clean line separating the morbid papillary process on the tarsal conjunctiva from the sound conjunctiva of the upper cul-de-sac. The microscope reveals the accumulation of opalescent papillæ along the upper edge of the tarsus in typical cases. There is great tendency to congestion of the eye from the most trivial causes. Washing the face will induce surprising congestion of the conjunctivæ, and this fact also serves for a sign of the affection. In one of his patients the eyes were excessively congested during the entire catamenial period each month. Another could not drink any alcoholic beverage without intense congestion of the eyes. In this patient, a young man, the attacks of "spring catarrh" had recurred annually for ten years. All his patients improved under treatment with calomel rubbed into the conjunctiva of the lid and application of a salve of white precipitate and cocain, supplemented by suprarenal extract, or curetting. Electrolysis had a remarkably prompt and beneficial effect in some cases, relieving them from the first day. The disturbances subsided spontaneously with the approach of winter, but recurred year after year unless thoroughly treated.

127. Hydatid Cysts in the Brain.—Morquio noticed in three cases of hydatid cysts in the brain that the symptoms common to cerebral tumors in general were subordinate to convulsive attacks. There was little if any headache and none in one case, and there was no vomiting. In one case there was occasional vertigo, causing falls when riding, which were assumed to be the cause instead of the effect of the cerebral lesion. The convulsions were accompanied by an apoplectic ictus and relaxation as in epilepsy. The symptoms suggested the latter disease, but the retention of consciousness and the subsequent tendency to paralysis of arm or leg differentiates the brain lesion in some cases. In others the attacks may simulate epilepsy in all respects, and are deceptive unless the eye is examined for edema of the papilla. When paralysis occurs it indicates the location of the brain lesion, and may simulate spasmodic infantile hemiplegia in its symptoms except for the history of the case. After elimination of tuberculosis and hereditary syphilis, a young subject who presents the above symptoms, especially if he comes from the country and has much to do with dogs, is suspicious of hydatid cyst in the brain. Other signs in its favor are the slowness of the process and the non-disturbance of general nutrition. Months and years may pass after the first symptoms before they excite alarm. The general health in the three children described was unusually robust. The character had been altered in one, until he was considered mentally unbalanced. This was explained by the location of the cyst in the frontal lobe. There are only two or three instances of spontaneous recovery on record and surgical intervention is indicated at the earliest possible moment. It was attempted in one of the cases described, and a cyst the size of a fetal head was removed, but the patient soon died with symptoms of shock. Herrera Vegas and Cranwell have cured 8 patients in 18 cases, operated on by the radical procedure. But when the tumor is large, extirpation at one sitting is almost inevitably fatal. He concludes his article, which was one of the addresses at the recent Interdepartmental medical congress in Uruguay, urging the necessity of impressing upon the public the increasing dangers of hydatid disease, and insisting that instruction in the appropriate prophylactic measures should be included in the routine of primary education.

New Patents.

Patents of interest to physicians, etc., September 16, 23 and 30:

709392. Suture clamp. Haydn Brown, Surbiton Hill, England.
709003. Producing soluble milk-albumin. Henry V. Dunham, New York City.
709223. Catamenial bandage. John P. James and R. M. Kippen, Melbourne, Canada.
709332. Folding stretcher or cot. John H. Koons, Lehighton, Pa.
709164. Aseptic sputum-receptacle and holder. Catherine M. Langhorne, Plainfield, N. J.
709103. Massaging device. Charles E. Mason, San Francisco.
709055. Body-brace. Philo B. Sheldon, Erie, Pa.
709367. Surgical instrument. Richard H. Simpson, Turnersville, Texas.
709058. Device for the cure of strabismus. John E. Stierle, Eau Claire, Wis.
709696. Radiant heat-bath. George Brueck, New York City.
709290. Dough cutter. George F. Zinn, Cincinnati.
709767. Bandage. Clara J. Higgins, [illegible]
709675. Pessary. Carl Hollweg, [illegible] Germany.
709790. Ophthalmoscope. Emil B. Meyrowitz, New York.
710234. Vaccine container. Hamill M. Alexander, Marietta, Pa.
709978. Auriphone. Frank I. Gano, Anaconda, Mont.
710060. Capsule for medicines. Desiderius S. Kann, Weinberge, Austria-Hungary.
709922. Making cellulose esters. Harry S. Mork, Boston; A. D. Little, Brookline; and W. H. Walker, Newton, Mass.
710001. Prescription cabinet. John J. Nesmith, Warren, Pa.
710076. Hospital mattress. Dora T. Rosett, New York City.
708931. Hot-air apparatus for the human body. George W. Sawyer, Marietta, I. T.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-

Patient Medical Department of the Jefferson Medical College Hospital. Volume III. September, 1902. Diseases of the Thorax and Its Viscera, Including the Heart, Lungs, and Blood Vessels—Dermatology and Syphilis—Diseases of the Nervous System—Obstetrics. Cloth. Pp. 431. Price, $1.50. Philadelphia and New York: Lea Brothers & Co. 1902.

Diseases of the Organs of Respiration. A Treatise on the Etiology, Pathology, Symptoms, Diagnosis, Prognosis and Treatment of Diseases of the Lungs and Air-Passages. By Samuel West, M.A., M.D., F.R.C.P., Assistant Physician and Lecturer on the Principles and Practice of Medicine, at St. Bartholomew's Hospital. In Two Volumes. Volumes I and II. With Numerous Diagrams and Illustrations. Cloth. Pp. 913. Price. $10.00. London: Charles Griffin & Co., Ltd. Philadelphia: J. B. Lippincott Co. 1902.

Physical Diagnosis. Diseases of the Thoracic and Abdominal Organs. A Manual for Students and Physicians. By Egbert Lefevre, M.D., Professor of Clinical Medicine and Associate Professor of Therapeutics in the University and Bellevue Hospital Medical College. Illustrated with 74 Engravings and 12 Monochrome Plates. Cloth. Pp. 448. Price, $2.25. Philadelphia and New York: Lea Brothers & Co. 1902.

The Diseases of Infancy and Childhood. For the Use of Students and Practitioners of Medicine. By L. Emmett Holt, M.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York. With 225 Illustrations, Including 9 Colored Plates. Second Edition, Revised and Enlarged. Cloth. Pp. 1161. Price, $6.00. New York: D. Appleton & Co. 1902.

Kirk's Handbook of Physiology. Revised by William H. Rockwell, Jr., M.D., and Charles L. Dana, A.M., M.D., Professor of Diseases of the Nervous System, Cornell University Medical College, New York. Seventeenth American Edition. With Upwards of 500 Illustrations, Including Many in Colors. Cloth. Pp. 854. Price, $3.00. New York: Wm. Wood & Co. 1902.

Anatomy and Histology of the Mouth and Teeth. By I. Norman Broomell, D.D.S., Professor of Dental Anatomy, Dental Histology, and Prosthetic Technics in the Pennsylvania College of Dental Surgery, Philadelphia. Second Edition, Revised and Enlarged, with 337 Illustrations. Cloth. Pp. 500. Price, $4.50 net. Philadelphia: P. Blakiston's Son & Co. 1902.

A Guide to the Practical Examination of the Urine. For the Use of Physicians and Students. By James Tyson, M.D., Professor of Medicine in the University of Pennsylvania. Tenth Edition, Revised and Corrected, with a Colored Plate and Wood Engravings. Cloth. Pp. 297. Price, $1.50. Philadelphia: P. Blakiston's Son & Co. 1902.

A Treatise on Diseases of the Anus, Rectum and Pelvic Colon. By James P. Tuttle, A.M., M.D., Professor of Rectal Surgery in the New York Polyclinic Medical School and Hospital. With 8 Colored Plates and 338 Illustrations in the Text. Cloth. Pp. 961. Price, $6.00. New York: D. Appleton & Co. 1902.

Photographic Atlas of the Diseases of the Skin. By George Henry Fox, A.M., M.D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, N. Y. Part XVI. Philadelphia and London: J. B. Lippincott Co. 1902.

The Medical Directory of New York, New Jersey and Connecticut. Volume IV, 1902-1903. Cloth. Pp. 958. Price, $2.50. Published by the New York State Medical Association, 64 Madison Ave., New York.

The Nose and Throat in Medical History. By Jonathan Wright, M.D., Brooklyn, N. Y., 8vo. Cloth. Pp. 250. Ten Illustrations. Price, $2.00 net. St. Louis, Mo.: The Laryngoscope Co.

Year-Book of the United States Department of Agriculture, 1901. Cloth. Pp. 846. Washington: The Government Printing Office. 1902.

Transactions of the Medical Society of the State of New York, for the Year 1902. Cloth. Pp. 527. Published by the Society. 1902.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., from September 26 to October 2, inclusive:

William C. Borden, major and surgeon, is relieved from duty as a member of the board of medical officers convened by Paragraph 1, Special Order No. 28, Feb. 2, 1901, from this office, for the examination of candidates for admission to the Medical Corps of the Army.

Mathew Leepere, major and surgeon, Vols., having tendered his resignation, is discharged from the service of the United States, by the Acting Secretary of War, Sept. 27, 1902.

Chas. E. Marrow, first lieutenant and asst.-surgeon, will proceed to Ft. Riley, Kan., and report in person to Major-General John C. Bates, for temporary duty in connection with the military maneuvers at that post, and on the completion of this duty will return to his proper station at Ft. Sheridan, Ill.

John L. Phillips, major and surgeon, is relieved from further duty in the Division of the Philippines, and will proceed to San Francisco, on the first available transport, and on arrival will report by telegraph to the adjutant-general of the Army for orders.

Frederick F. Russell, first lieutenant and asst.-surgeon, is granted leave of absence for three months, to take effect Oct. 1, 1902.

Thomas L. Rhoads, first lieutenant and asst.-surgeon, will, upon the expiration of his present leave of absence, proceed to San Francisco, Cal., and report in person to the commanding general, Department of California, for assignment to duty at the U. S. General Hospital at that place.

Henry S. Turrill, lieut.-col. and deputy surgeon-general, is relieved from duty as chief surgeon, Department of the Missouri, and will proceed to New York City, and assume charge of the medical supply depot in that city during the absence of Colonel Justus M. Brown, assistant surgeon-general, on leave granted him in Paragraph 15, Special Order No. 218, Headquarters of the Army.

Wilfred Turnbull, first lieutenant and asst.-surgeon, is relieved from further duty in the Division of the Philippines, and will proceed to San Francisco, Cal., and upon arrival will report by telegraph to the adjutant-general of the Army for orders.

Navy Changes.

Changes in the Medical Corps of the Navy, Oct. 4, 1902:

P. A. Surgeon F. E. McCullough, detached from the naval hospital, Mare Island, Cal., and ordered to the *Alert*.

P. A. Surgeon J. C. Pryor, detached from the *Massachusetts* and ordered to the *Bancroft*.

P. A. Surgeon J. F. Leys, detached from the naval hospital, Newport, R. I., and ordered to the *Supply*.

P. A. Surgeon F. C. Cook, detached from the *Supply* and ordered to the naval hospital, Newport, R. I.

P. A. Surgeon E. V. Armstrong, placed on the retired list Sept. 27, 1902.

The following-named officers were detached from the *Solace* and ordered home and to wait orders. P. A. Surgeon A. R. Alfred, P. A. Surgeon C. P. Bagg, P. A. Surgeon M. K. Johnson, and Asst.-Surgeon H. E. Odell.

Surgeon H. L. Law, retired, ordered to the naval recruiting rendezvous, Boston.

A. A. Surgeon J. H. Holloway, appointed asst.-surgeon Sept 27, 1902, with rank of lieutenant (junior grade).

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Oct. 2, 1902:

Surgeon G. W. Stoner, Bureau letter of Sept. 11, 1902, granting leave of absence for 15 days amended so that said leave shall be for 14 days.

Surgeon S. D. Brooks, leave of absence for 15 days from September 27, granted by Bureau letter of September 20, amended so that it shall commence September 29.

Surgeon J. O. Cobb, granted leave of absence for two months from Oct. 8, 1902, on account of sickness.

P. A. Surgeon Hill Hastings, granted extension of leave of absence for two months and 26 days from October 3.

Asst.-Surgeon V. G. Heiser, relieved from duty as immigrant inspector in Canada and directed to visit different points between the United States and Canada to institute a system whereby uniformity in medical inspection of alien immigrants bound for ports in the United States can be assured.

Asst.-Surgeon B. S. Warren, granted leave of absence for 14 days from September 29.

A. A. Surgeon Francis Duffy, leave of absence for six days granted by Bureau letter of August 22, revoked.

Senior Pharmacist E. B. Scott, Department letter granting leave of absence for 19 days from September 6, amended so that said leave shall date from September 16.

RESIGNATION.

P. A. Surgeon Hill Hastings, resigned, to take effect Dec. 29, 1902.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 4, 1902:

SMALLPOX—UNITED STATES.

Delaware: Sussex County, Sept. 1-26, 7 cases.
Illinois: Freeport, Sept. 20-27, 2 cases.
Indiana: Sept. 20-27, Indianapolis, 2 cases; South Bend, 2 cases.
Kansas: Wichita, Sept. 20-27, 3 cases.
Massachusetts: Chelsea, Sept. 20-27, 1 case.
Michigan: Grand Rapids, Sept. 13-20, 1 case.
Montana: Butte, Sept. 20-28, 1 case.
New Hampshire: Nashua, Sept. 20-27, 13 cases, 1 death.
New Jersey: Newark, Sept. 20-27, 3 cases.
New York: New York, Sept. 20-27, 5 cases, 1 death.
Ohio: Cleveland, Sept. 20-27, 79 cases, 17 deaths.
Pennsylvania: Sept. 20-27, Erie, 1 case; McKeesport, 14 cases, 2 deaths; Pittsburg, 7 cases, 7 deaths.
South Carolina: Charleston, Sept. 20-27, 1 case.
Wisconsin: Green Bay, Sept. 20-28, 1 case.

SMALLPOX—FOREIGN.

Barbadoes: Aug. 31-Sept. 15, 226 cases, 11 deaths.
Canada: Amherstburg, Sept. 20-27, 1 case.
Great Britain: Dundee, Sept. 13-20, 1 case; Liverpool, Sept. 13-20, 3 cases; London, Sept. 6-13, 7 cases, 2 deaths; Sunderland, Sept. 6-13, 4 cases.
Italy: Sept. 6-13, Naples, 1 case; Palermo, 10 cases, 1 death.
Mexico: Mexico, Sept. 14-21, 1 death.
Russia: St. Petersburg, Aug. 30-Sept. 13, 18 cases, 9 deaths.
Straits Settlements: Singapore, Aug. 2-16, 1 case, 1 death.

YELLOW FEVER.

Colombia: Panama, Sept. 15-22, 3 cases, 1 death.
Cuba: Havana, Sept. 19, 1 case removed from S. S. *Havana*, from Mexican ports.
Mexico: Coatzacoalcos, Sept. 13-20, 1 case, 1 death; Mexico, Sept. 14-21, 2 cases; Tampico, Sept. 26, 1 death.

CHOLERA—FOREIGN.

China: Hongkong, Aug. 9-16, 21 cases, 19 deaths.
India: Calcutta, Aug. 23-30, 11 deaths.
Japan: Osaka and Hiogo, Aug. 30-Sept. 6, 17 cases, 18 deaths.
Java: Batavia, Aug. 15-23, 38 cases, 35 deaths.
Straits Settlements: Singapore, Aug. 2-16, 55 cases, 55 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Sept. 11, 1 case, 1 death; Sept. 16, 1 case, 1 death.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 9-16, 12 cases, 12 deaths.
India: Calcutta, Aug. 23-30, 24 deaths.

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Original Articles.

UNDER WHAT CIRCUMSTANCES IS IT ADVISABLE TO REMOVE THE VERMIFORM APPENDIX WHEN THE ABDOMEN IS OPENED FOR OTHER REASONS?

HOWARD A. KELLY, M.D.
BALTIMORE.

The importance of the vermiform appendix as a possible cause of complication in gynecologic pelvic surgery was suddenly and sharply brought to my attention some time since by the case of a patient who came under my care in December, 1894, suffering from general pelvic discomfort and painful menstruation. I made a median abdominal incision and found the uterus retroflexed, the ovaries adherent and the vaginal outlet relaxed. The uterus was suspended, the varicose ovarian veins ligated and the vaginal outlet repaired. The patient was little if at all improved by my treatment, to our mutual disappointment. After leaving my care she went to live in Pennsylvania, and some months later I had a letter from her, informing me that she had had an attack of appendicitis, for which she had been operated on by my old friend Dr. John Deaver. The result of the operation was a complete relief of all her previous symptoms, making it evident that the appendix had been the real cause of her pain and discomfort. I received this information with a sincere pleasure, not unmixed with some sense of mortification, but like other hard knocks this one taught me a valuable lesson.

Since the receipt of her reproachful letter I have never opened the abdomen without examining the appendix, whenever it was possible to do so without enlarging the incision or running the risk of conveying infection to clean structures. I have also ever since made a point of noting the condition of the appendix when examined, especially as regards its length and its freedom or adherence, including these data among others which the anesthetizer is expected to fill out on a printed slip. My statistics show that in a series of 115 cases in which the condition of the appendix was noted at the operation, it was found adherent to the right tube or ovary in 10 cases, in 37 cases it was involved in adhesions, it was congested in 3 cases and obliterated at the cecal end in one case. Only 64 appendices were perfectly normal. In a series of 200 abdominal sections I have had occasion to remove the appendix 25 times.[1]

My interest in this subject has recently received a fresh stimulus from the fact that I am now preparing to publish a book on the appendix, and I have been under the necessity of closely considering the conditions requiring its removal in my chapter on operative treatment. I find myself, under these circumstances, frequently brought face to face with the following question. Is it advisable to remove the apparently normal appendix whenever the abdomen is opened for other reasons; or, in other words, whenever there is an incision anywhere in the right lower quadrant of the abdomen?

In discussing this question with various friends I have found that considerable diversity of opinion existed among them in regard to it, and while some were decided in their belief that the radical plan of removal should always be adopted, others were equally emphatic in decrying such a procedure as meddlesome surgery. My experience in the matter led me to think that if the views of a number of prominent professional men on the subject were known it might lead to a general consensus of opinion in regard to it. I wrote, therefore, to 80 well-known surgeons in different parts of the United States, asking for their opinions and requesting permission to publish their replies. To these 80 inquiries I have received 74 answers. The method of interrogation employed was that of sending to each individual a return postal card containing two *categorical* questions in the following form:

Will you kindly write *yes or no*, after the two following queries:

1. When the abdomen is *opened* for other causes, and the perfectly normal appendix is easily accessible, is it your rule to remove it?

2. When the appendix is slightly adherent to neighboring structures, as peritoneum, *ovarian* or fibroid tumors, do you then remove it?

(*Answer may be published.*)

The replies to these questions make it evident that no uniformity of opinion exists as to the propriety of removing an entirely normal appendix. One surgeon of ability and experience, for instance, replies to the first question, "Yes, always," while another whose opinion is no less entitled to consideration, answers, "No; it is unsurgical." This wide divergence of opinion is only another evidence that our knowledge of the appendix must undergo further evolution before any unanimity exists among surgeons as to its surgical treatment. Contributions to the study of the subject likely to further this end are at present valuable, and, therefore, I think that the different points of view which have been revealed in the course of my inquiry call for a more detailed discussion than would be possible or suitable in the brief space which is all that can be devoted to the subject in the work for which the information was originally intended.

It is only fair that I should call attention at the outset to the fact that the categorical form of my inquiry did not allow the surgeons to whom it was addressed any opportunity to qualify their opinions, which some of them may have wished to do. Notwithstanding the conditions imposed, however, various restrictive clauses appear in their replies. Such qualified answers as "No; but I do sometimes," or "Yes, usually" have been treated as unqualified, since it is the rule which is expressly asked for and special cases are not the object of consideration. Qualifications such as "if the patient's condition permits" have also been set aside, because it is assumed that any serious contraindication nullifies the question. Some few qualified answers remain which can not be classified unreservedly as either affirmative or negative, and these are separately considered.

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[1] "The Exploration of the Abdomen as an Adjunct to Every Celiotomy," Med. News, Dec. 16, 1899.

REMOVAL OF NORMAL APPENDIX.

The following is a tabulation of the answers received to the first question: "When the abdomen is opened for other causes and the perfectly normal appendix is easily accessible, is it your rule to remove it?"

SURGEONS ANSWERING "YES."

Baker, W. H.
Boldt, H. J.
Bovee, J. W.
Cartledge, A. M.
Cleveland, C.
Dickinson, R. L.
Dudley, A. P.
Edebohls, G. M.
Fry, H. D.
Harvie, J. B.
Henrotin, F.
Houston, D. H.
Johnston, G. B
Lydston, G. F.
Mann, M. D.
MacDonald, W. G.
MacMonagle, B.
McBurney, C.
McCosh, A. J.
McRae, F. W.
Meyer, W.
Peck, G. S.
Richardson, M.
Schachner, A.
Van Lennep, W. B.
Vineberg, H. M.

Total. 26.

SURGEONS ANSWERING "NO."

Abbe, R.
Allen, D. P.
Bagot, W. S.
Beck, C.
Bernays, A. C.
Boise, E.
Bonifield, C. J.
Burrage, W. L.
Cabot, A. T.
Carmalt, W. H.
Carpenter, J. S.
Chadwick, J. R.
Cordier, A. H.
Currier, A. F.
Cushing, E. W.
Davenport, F. H.
Deaver, J. B.
Douglas, R.
Dudley, E. C.
Edgar, J. C.
Finney, J. M. T.
Goelet, R. H.
Goffe, J. R.
Johnson, J. T.
Laplace, E.
Marcy, H. O.
Martin, E.
McMurtry, L. S.
Montgomery, E. E
Murphy, J. B.
Newman, H. P.
Noble, C. P.
Noble, G. H.
Norris, R. C.
Palmer, C. D.
Park, R.
Pilcher, L. S.
Price, J.
Pryor, W. R.
Reynolds, E.
Rodman, W. E
Senn, N.
Van Hook, W.
Vander Veer, A.

Total, 44.

The following are the qualified answers received:

J. G. Clark.—I usually say to the patient that if I were in a similar position, I should have it removed. At least 50 per cent. request it under these circumstances.

H. C. Coe.—No, not yet; but I am becoming converted to the practice.

A. F. Jonas.—Not always.

B. H. Wells.—Yes, with the patient's consent, and when it does not increase risk.

REMOVAL OF THE SLIGHTLY ADHERENT APPENDIX.

Following are the answers to the second question: "When the appendix is slightly adherent to neighboring structures, peritoneum, ovarian or fibroid tumors, do you then remove it?"

SURGEONS ANSWERING "YES."

Abbe, R.
Allen, D. P.
Baker, W. H.
Bernays, A. C.
Boldt, W. J.
Bovee, J. W.
Bonifield, C. J.
Cabot, A. T.
Carpenter, J. S.
Cartledge, A. M.
Chadwick, J. R.
Clark. J. G.
Cleveland, C.
Coe, W. C.
Cordier, A. H.
Cushing, E. W.
Davenport, F. H.
Deaver, J. B.
Dickenson, R. L.
Dudley, A. P.
Edebohls, G. M.
Edgar, J. C.
Finney, J. M. T.
Fry, H. D.
Goelet, A. H.
Goffe, J. R.
Harvie, J. B.
Henrotin, F.
Houston, D. H.
Johnston, G. B.
Jonas, A. F.
Laplace, E.
Lydston, G. F.
Mann, M. D.
Marcy, H. O.
Martin, E.
MacDonald, W. G.
MacMonagle, B.
McBurney, C.
McCosh, A. J.
McMurtry, L. S.
McRae, F. W.
Meyer, W.
Murphy, J. B.
Newman, H. P.
Noble, C. P.
Palmer, C. D.
Park, R.
Peck, G. S.
Pilcher, L. S.
Price, J.
Reynolds, E.
Richardson, M.
Rodman, W. L.
Schachner, A.
Senn, N.
Van Lennep, W. B.
Vander Veer, A.
Vineberg, H. N.
Wells, A. M.

Total, 60.

SURGEONS ANSWERING "NO."

Bagot, W. S.
Boise, E.
Burrage, W. L
Carmalt, W. H.
Currier, R. F.
Noble, G. H.
Pryor, W. K.

Total, 7.

The following qualified answers to this question were received:

C. Beck.--Preferably, yes; but not unconditionally.

R. Douglas.—Yes, if adherent to normal structures; no, if only slightly adherent to neoplasms.

E. C. Dudley.—So many considerations pertain here, that the question should not be answered yes or no.

J. T. Johnson.—I do, if it is diseased, or injured by the separation of adhesions.

E. E. Montgomery.—Not unless conditions are such as to lead me to fear that it will be involved in subsequent adhesions.

R. C. Norris.—Not always.

W. Van Hook.—I would remove the appendix:

1. When its removal would facilitate the remainder of the operation.
2. When the integrity of its blood supply is interfered with.
3. When the appendix itself is diseased.

We have here 44 unqualified negatives to the first question against 26 affirmatives; and 60 unrestricted affirmatives to the second question against 7 negatives. Therefore, these results show a large majority against the removal of the normal appendix simply because the opportunity arises to do so; and an overwhelming majority in favor of the removal of the appendix when it deviates in the slightest degree from normal.

My own opinion coincides in both cases with that of the majority. I never remove the appendix in the course of an operation for other causes when it proves entirely normal on examination, but I always remove it if it is even slightly adherent to other organs. I also remove it invariably when it is free if its length exceeds normal. My reasons for not removing the normal appendix are as follows:

1. Its removal involves a slight additional risk, owing to the fact that no matter how good the patient's condition may be at the time the appendix is removed, there is no guarantee that it will remain so until the end of the operation, and should a condition of shock ensue the additional five minutes consumed in the removal of the appendix will lessen the chances of recovery.

2. We are not yet in a position to estimate the importance of removing the normal appendix as a prophylactic measure, for statistics have not yet shown that there is a definite *per mille* risk, either of death or of serious disease, in retaining the organ.

3. The fact that the appendix has no known function does not prove that it is a functionless organ, although we are in the habit of calling it so; and it is possible that an improved knowledge concerning it may in the future demonstrate some reason for its preservation. It is only a few years since the ovaries were supposed to have no use or purpose except that of reproduction, and their extirpation, apart from the interference with their primary function, was a matter of no importance. Now, however, when their relation to the process of internal secretion is beginning to be under-

stood, we find ourselves responsible for their preservation from entirely different reasons.

The arguments of those who believe in removing the normal appendix whenever possible are so well stated by Dr. Maurice Richardson in a letter accompanying his formal reply to my questions that I can not do better than quote his words:

> The questions on your postal card with reference to appendectomy require, in my opinion, more than "yes" and "no" answers. The first question, to which I replied "yes," was, in substance, whether, in the course of abdominal operations, I remove the normal appendix. I should not take the five minutes necessary for this operation if the patient's condition were not excellent. I should not remove the appendix in hopeless disease of other viscera. I should not make a second incision to remove it, were it not entirely accessible through the first. I do not think that removal of the accessible normal appendix —or, for that matter, the abnormal non-adherent appendix, with healthy base and healthy cecum—I do not think, I say, that removal of such an appendix adds materially to the shock. I have removed consecutively five hundred appendices, more or less diseased, from patients in good general condition without mortality. Some of the operations have been exceedingly severe, and very extensive, but all the patients have recovered. Some cases have required resection and suture of the cecum; some dissections a foot long; but the results have been invariably favorable. Acute appendicitis in its fulminating form is such a dreadful disease—having always from its very nature a fearful mortality, no matter who operates, or how, that I am unequivocally in favor not only of seeking the appendix in every suspected case, but of removing the normal appendix whenever it is exposed.

Dr. Richardson's views in regard to the second point at issue, the removal of the slightly adherent appendix, agree entirely with my own, and I again make use of them as a clear and forcible expression of the reasons for the course approved by the large majority of surgeons:

> With reference to the second question, I would say that when there is the slightest evidence of the abnormal I deem it my duty to remove the appendix, even if the risk of the original operation is somewhat increased; provided, always, that the patient has no bar to operation in general condition, in age, in hopeless lesions of other viscera, in lesions of other viscera which may temporarily contraindicate operation, or in lesions of other viscera which will in a few years fatally compromise life. If, for any other reason, the patient has a short expectancy of life I do not remove the appendix in these cases. Any of these reasons would, of course, contraindicate the removal of a healthy appendix.

There remain two points relating to the subject under discussion which ought not to pass unnoticed.

Dr. Robert Abbe is of the opinion that the perfectly normal appendix never contains fecal concretions. They are frequently present, however, in appendices which are entirely normal in appearance, and I have found them myself in such appendices in a number of instances. Therefore, any appendix in which concretions can be felt should be removed, even though it is to all appearance entirely healthy.

The question is occasionally raised whether the appendix ought not always to be removed when operations are performed in the neighborhood of the cecum which might give rise to post-operative adhesions. In the case of men such risk is inconsiderable, but with women there is a possibility that the appendix may become adherent to the fresh wound in operations on the uterus or the right ovary. Five cases of this kind, two of which were my own patients, have come under my observation. They are cited in the section on operation in my forthcoming book. It is sufficient to say here that in one of my cases the appendix became adherent to the stump of the right ovary, and was subsequently removed by the late Dr. Hunter McGuire; and in the other, where the appendix was adherent to the wound in the uterus, caused by a myomectomy, it was removed by Dr. Finney. The other three cases were all consequent on the removal of the right ovary, and the operation for the removal of the appendix was done by Dr. McGuire in one case and by myself in the other two. Two of the five cases have been reported by Dr. McGuire,[2] who makes, in connection with them, a suggestion of much practical importance, namely, that whenever the right ovary is removed the raw stump should be protected by covering it with peritoneum and burying it out of sight. There is no doubt that an appendix which hangs free from the end of the cecum and is long enough to reach the field of an adjacent operation is liable to become adherent and thus become the source of an attack of appendicitis. I therefore adopt the rule of removing long free appendices in all right-sided pelvic operations, but I would not remove a short appendix which is normal, nor one which is tucked up on either side of the cecum.

CONCLUSIONS.

In conclusion the following points should be emphasized:

1. The appendix should always be examined and its condition noted whenever the abdominal cavity is opened for any reason, provided no additional risk is involved.

2. The opinion of the majority of surgeons in this country is against the removal of a perfectly healthy appendix, 44 to 26 being the proportion shown in my investigation.

3. The opinion of the large majority of surgeons is in favor of removing an appendix which is even slightly adherent to other structures, 60 to 7 being the proportion shown in my investigation.

4. The fact that the appendix is normal in appearance does not prove that it contains no fecal concretions, for I have found them in a number of instances. Their presence is sufficient reason for the removal of an apparently healthy appendix.

5. After removal of the right ovary the stump should always be covered with peritoneum in order to prevent the risk of adhesion to the appendix. A long and free appendix should invariably be removed.

DRAINAGE OF EXTRAVESICAL AND EXTRAPERITONEAL SUPPURATIONS OF THE MALE PELVIS.[*]

EUGENE FULLER, M.D.

NEW YORK CITY.

ANATOMIC RELATIONS.

The anatomic part to be considered represents the space, or perhaps better, the line of union, bounded externally by the deep pelvic fascia which covers the inner contour of the pelvic cavity and internally by the peritoneum and by the fibrous sheath which envelops in common the bladder, the male sexual apparatus and the upper rectum. This sheath is really formed of deflections from the deep pelvic fascia which project upward from the points where the pelvic viscera make their exits from the pelvic cavity. It is evident, therefore, that the lower limits of this space are sharply defined, while there is really no definition to the upper limits, these latter being simply continuous with the line of union of the peritoneum and the abdominal fascia. In the upper anterior portion of this pelvic space and on the border line between it and the abdominal line of union just mentioned is the space of Retzius, the limits of which are the deep pelvic fascia in front, the bladder behind and the peritoneal deflection onto the bladder above. When the bladder is in a state of collapse the space of Retzius lies wholly in the cavity of the pelvis. With the distension of that organ it extends correspondingly into the abdominal cavity. A loose network of fibrous tissue fills this pelvic space, forming a slight connection between the opposing surfaces, but not sufficient, however, to limit the expansive and contractile qualities of the pelvic viscera. Aside from the loose fibrous tissue there is little of anatomic importance in this part except blood vessels, and in the study of suppurations special attention should be paid to the chief of these—the external iliac and the obturator vessels. It has been seen that the deep pelvic fascia sends deflections upward onto the pelvic viscera. The opposite condition, however, pertains in its relation to the blood vessels just mentioned, for at the points where they emerge from the pelvis, namely, under Scarpa's triangle and at the obturator foramen, the pelvic fascia instead of sending deflections upward sends them downward. As a consequence of this there is under Scarpa's triangle—and especially externally to the vessels—a pathway out of the pelvic space under consideration and one also alongside the obturator vessels. The latter point of exit is, however, so narrow that burrowing fluids rarely take that course. Above Poupart's ligament and just outside the limits of this pelvic space there is another similar path of exit along the vessels and structures lying in the inguinal canal. In the corresponding abdominal space the peritoneum is much more firmly and closely connected to the outlying fascia in front and laterally than behind.

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[2] Trans. Med. Soc. Va., 1895.

[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

RESULTS OF SUPPURATION.

Now, supposing suppuration occurs in the pelvic region under consideration and that it is not artificially liberated, what happens? It naturally burrows, extending in what in each individual case proves to be the direction of least resistance. In most instances where it starts very dependently it is apt to extend upward out of the pelvis posteriorly, mounting perhaps as high as the kidneys in the perinephritic space, or burrowing forward it may extend into the thigh along the space externally to the external iliac vessels beneath Scarpa's triangle. If this last point of exit in a given instance is not specially patulous and the anterior and upward burrowing continues, infiltration into the scrotum results. Exit along the obturator vessels is rare, owing to the great narrowness of the path. When it does occur the infiltration is into the thigh. Upward burrowing may take place into the space of Retzius and from there still further upward perhaps to the umbilicus, separating the peritoneum from its attachment to the transversalis fascia. When this occurs a hypogastric fusiform tumefaction results, which presents to abdominal inspection and examination many of the evidences of vesical overdistension. Sometimes upward burrowing does not take place in the median line but to one side, a deep brawny abdominal tumefaction presenting above and largely externally to Poupart's ligament, extending from there outward in the direction of the anterior superior spine of the ileum. A natural vent into the bladder or rectum may occur, the pus discharging itself with the normal bodily excretions. Many times, and in fact in the majority of instances, suppurations do not originate in or adjacent to this pelvic space but gravitate and burrow into it from above, their course being the corresponding abdominal extraperitoneal region.

ETIOLOGY.

In considering the causes for suppurations involving the part under discussion it is well to divide them into two general classes: 1, Those the source of which is the pelvic region, and 2, those that burrow into the pelvic space from the corresponding abdominal region. The great majority of cases of the first class originate from urinary extravasations. All extraperitoneal ruptures of the bladder, aside from those involving the apex of the organ, are followed by urinary extravasation into the pelvic region under consideration. Extravasations or suppurations involving the lymph space between the prostatic capsule and the rectum may break through the fibrous deflection from the deep pelvic fascia and so invade the space. Lacerations of the prostatic urethra and prostate, giving rise to extravasations and prostatic or seminal vesicular abscess caused by trauma, the streptococcus, the gonococcus, the tubercle bacillus or other infection, are the usual genito-urinary causes for suppuration into the recto-prostatic lymph space. Lacerations of the rectum and infections associated with that part are rectal causes. Besides these there is a rare class of suppurations which have been designated "idiopathic," a definition which practically signifies cause unknown. Most of these latter instances not really coming under the headings already mentioned probably originate from that part of the circulatory or lymphatic system which traverses the part. Infective thrombosis of the prostatic plexus, for instance, is not presumably of great rarity. Suppurative processes may break into the space through the deep pelvic fascia, these being the result of traumatisms, perforating wounds, gunshots, tubercle or other agency causing pelvic bone or tissue necrosis.

Suppurations which enter the pelvic from the abdominal region are perhaps most frequently associated with suprapubic cystotomy or other abdominal operation wherein first intention has not been attained, but suppuration has developed between the peritoneum and the underlying fascia. Traumatisms and lacerations involving the abdominal wall may produce like results. Perinephritic, perihepatic and psoas abscess may enter the part posteriorly from above. Suppurations the source of which are appendicitis not so very infrequently enter this pelvic region in like manner. Suppurations in connection with the inguinal glands may burrow deeply, perforate the deep abdominal fascia above or externally to Poupart's ligament, and from there gravitate into the pelvic space. I have in mind an instance of this latter description, where the pus after traversing one side of the pelvic space finally extended upward behind, mounting nearly to the kidney.

SYMPTOMS.

The clinical symptoms associated with suppuration in the part under consideration are liable to be somewhat obscure. Where suppuration follows secondary to and as a complication of fracture or laceration of the pelvis, extraperitoneal rupture or perforation of the bladder or rectum, then the chief clinical symptoms are due directly to the primary injury and will not be here considered. The secondary evidences of infection in such instances would lead the surgeon to suspect the ushering in of deep pelvic suppuration. In all instances there are present generalized evidences of sepsis together with the characteristic range of temperature. Frequent and urgent urination is apt to be present even though the bladder has not been primarily involved, owing to the condition of pericystitis that the suppuration occasions. Localized pain may be complained of, but many times the sensations of pain are liable to radiate into the thighs, the hypogastric or inguinal region or into the back. If the suppuration tends to burrow in any of the directions already described, then resulting symptoms develop. If there is a discharge into the rectum or bladder there is the sudden gush of pus which appears in the feces or urine. If it points into the thigh the limb becomes flexed and generally tumefied. If into the scrotum or abdominal region tumefactions such as already described result. If evidences of sepsis, generally of a low grade, follow the operation of suprapubic cystotomy and one observes at irregular intervals much thick pus on the dressings, he should strongly suspect that the pus is from the pelvic space, which has become involved through an extension from the space of Retzius. Occasionally a case is encountered where all the remaining clinical symptoms are due to the cicatrix left by a preceding suppuration, which has ended in resolution. Most of such cases belong to a class where the suppuration has burrowed into the pelvic space from above, as may occur in connection with appendicitis. and where, as a result of abdominal surgery, the source of the inflammation has been removed Frequent urination, sexual impairment and generalized and somewhat indefinite symptoms of vesical and pelvic discomfort are the usual clinical features in cases of this latter description, provided the cicatrix is extensive. Where the cicatrix is not extensive no symptoms are apt to result or to persist beyond the period of convalescence.

DIAGNOSIS.

Diagnosis can be made through a careful consideration of the clinical evidences, together with inspection, hypogastric palpation, rectal and perhaps vesical exploration. The various forms of palpation as well as inspection are for the purpose of determining the existence of inflammatory tumefaction. The only vesical explorations necessary would be such as are employed to detect the existence of pericystitis. In making a diagnosis positive and exact through surgical exploration the probe is the chief and often the only necessary instrument. In case there is already an existing vent for pus the path of exit should be carefully determined and the location of the main pocket established. In case there is no vent and a brawny tumefaction is discovered it may be wise to make an opening to allow the entrance of the probe. Thus the space of Retzius, the inguinal region, the scrotum, the thigh and the loin may be opened. If a tumefaction is detected chiefly or wholly through rectal digital exploration no opening through the part should, however, be made for diagnostic purposes.

SURGICAL TREATMENT.

The surgical management of suppuration in this part or elsewhere lies in the establishment of free drainage. In order that drainage be free it must be dependent. As the pelvic cavity is deep the surgical problem of effecting dependent drainage arises. The fatality in this class of cases has hitherto been, and still is large, due, in my opinion, to inefficient surgery, death resulting from septic absorption, the source of which is an undrained area. In each individual case there are two surgical principles to be determined in connection with the establishment of the drainage: First, the location of the dependent pocket of suppuration, and, second, the dependent dissection to reach that pocket. The first step should always be the location of the pocket. No dependent dissection should be attempted till the pocket has been located. The silver flexible probe is the instrument to be employed in determining the location. In order that a probe taking a reasonably straight course may enter the dependent portion of this pelvic space it must pierce the abdominal wall on either side just below the point of peritoneal deflection and above and parallel to the outer portion of Poupart's ligament. In fact, the path taken through the abdomen is much the same as that chosen in making the incision to accomplish ligation of the external iliac artery. As the two lateral chambers of this pelvic space have no connection dependently, it is rare that both of them are involved by suppuration in a given instance, consequently but one abdominal incision for the passage of the probe is commonly necessary. Not uncommonly, as has already been considered, a suppuration tends to burrow upward and to point in the portion indicated for the entrance of the probe. Suppose, however, it burrows upward in the median abdominal line along the space of Retzius. In such an instance the proper abdominal vent will be by a median hypogastric longitudinal incision. Through such an incision by much bending a probe can be able to take a tortuous course around the bladder and downward. But one can never properly locate the area of pelvic involvement by means of a probe so bent. In such an instance the proper procedure after making the median abdominal incision is to pass in the probe or director laterally, slipping its point along under the muscular abdominal wall below the peritoneal deflection until the proper spot above the outer portion of Poupart's ligament is reached, and then to make the lateral abdominal opening down onto the end of the probe. Through this second opening a second probe can be passed to thoroughly explore the deep pelvis. Where the pelvic suppuration has extended upward posteriorly, presenting a brawny area, somewhere above the crest of the ileum, an incision should first be made into that area, and then through the vent hole in the loin the probe should be passed and a counter-inguinal incision made exposing its point, as in the first instance. Likewise, where a burrowing has taken place into the thigh or scrotum, a primary vent can be made in that part and then a secondary counter opening made down onto the end of the probe in the inguinal region. In most instances, however, where burrowing has taken place into the thigh or scrotum, a brawny indurated area has first developed in the inguinal region, so it may be better in these cases to make the inguinal incision the primary one and to pass the probe through it into the pelvic space and out along the path the burrowing has taken into the thigh or scrotum, as the case may be, the incision in those parts being made secondary and its position determined by the end of the probe. Where the source of suppuration is in the corresponding abdominal space and from there has burrowed into the pelvic space it is advisable, in case the source of the suppuration can be tapped, to pass the probe along whichever lateral course the burrowing has taken and then to make the counter inguinal incision on its end.

The second step in the surgical procedure is the dependent dissection. This dissection should open a perineal path and expose the lymph space between the prostatic capsule and the rectum, the urethra being left intact. In making this dissection the dorsal position and the Zuckerkandl incision can be employed; but what is far superior is the knee-breast position and the incision which I devised to expose the seminal vesicles and prostate, a description of which has been published in the May 4 1901, issue of The Journal of the American Medical Association. The finger now being introduced through the perineal incision and into the space between the prostatic capsule and the rectum, the end of the probe inserted through the inguinal incision can be plainly felt separated from the finger tip by the upward deflection of fascia which envelops the pelvic viscera. By firm pressure on the probe, aided perhaps by a snip with the scissors, this fascia can be punctured, the probe end coming in contact with the finger tip. A perforation having been so made, it is safer to divulse the opening rather than to enlarge it by cutting in order to avoid the possibility of opening a blood vessel in an inaccessible region. A perforated drainage tube of good caliber is next attached to the inguinal end of the probe by means of a cord passed through its eye, after which the probe, followed by the drainage tube, is dragged through the perineal opening and the lower end of the tube fastened at the perineal surface while the upper end is secured at the inguinal surface. The perineal wound is closed about the tube. If the inguinal opening is a counter incision, the primary opening being in the abdomen, the thigh or the scrotum, a second drainage tube should be placed connecting the primary opening with the inguinal one. In very rare instances, where both lateral chambers of the pelvic space are involved by suppuration, it is necessary to put a drainage tube through each side. The after-treatment consists in flushing out the tubes frequently with peroxid of hydrogen solution. The tubes should not be withdrawn until all slough has come away and until firm granulations have formed about them. With the establishment of thorough drainage such as has been described, it is wonderful how quickly convalescence is attained in these otherwise usually fatal cases.

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EXTERNAL URETHROTOMY FROM THE STANDPOINT OF THE GENERAL SURGEON.*

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The general surgeon is not infrequently called on, especially in his hospital work, to perform external urethrotomy for one condition or another, and it has seemed worth while to make an informal report of 50 cases that have come in my own practice within the last few years.

There is no operation so fascinating, nor at times so difficult to perform. A good knowledge of anatomy, patience, and careful, often slow, dissection is requisite. A single false step is frequently fatal to a clear operation. To complete an operation that has been started by another operator is most difficult, as the writer has found on several occasions. Naturally most of the operations are for deep stricture, but there are many other conditions, expected and unexpected, that require an opening into the urethra, and these conditions lend additional interest to an operation otherwise considered as a routine. The surgeon in the large hospital sees not the simple strictures that have been carefully watched and measured, but the infinite variety of complications, general and local, that call upon all of his surgical skill. By grouping these few personal cases I can perchance emphasize the interest and difficulty of the operation and by my own mistakes prevent others from falling into the numerous pitfalls.

As a rule, where any sort of a guide can be introduced into the bladder, the opening in the urethra is easily made. Rarely is there a stricture that will not yield to a whalebone filiform bougie if patient attempts are made to pass one out of half a dozen introduced down to the constriction. Where there is the least question as to the exact course of the guide it is safer to dissect open the corpus spongiosum until the mucous membrane is definitely seen and followed backwards, disregarding the guide which may be in a false passage. Rarely it may be advisable to open the bladder above the pubes in order to pass a guide from behind. Had I adopted this plan in one of my cases a fatal result might have been avoided. The incision through the skin and muscle should be made in the median line, with the patient lying squarely in the lithotomy position. When the corpus spongiosum is reached the incision frequently has to be carried to one side owing to the deflection of the urethra by scar contraction, extravasation, hemorrhage, etc. By splitting the bulb in the median line, hemorrhage is rarely troublesome; the reverse is the case when it is split to one side, and this untoward sign may be taken as an anatomical landmark. When the urethra is opened anterior to an impassable constriction, for which careful visual search must be made, the lateral walls are best retracted with silk sutures, or, as I learned from one of our surgeons, Dr. Post, by snapping each edge with an old-fashioned "bulldog" forceps. The mucous membrane should be sponged very gently; otherwise it quickly becomes rough and bloody and obscure to both sight and touch. A guide, such as a fine probe or a small director, once passed through a stricture. must not be removed until the constriction is enlarged, preferably by cutting backwards in the median line, so that a larger guide, such as a full-sized director or a gorget, can be passed alongside into the bladder.

In case of a tight stricture, admitting a filiform guide, Gavin's method of first cutting all the strictures, anterior and deep, with a Maisonneuve urethrotome and then at once opening the perineum on a large grooved staff, is worthy of trial. It shortens the operation somewhat, but is open to the objection that occasionally the guide will pass into false passages and then when the perineum is opened the anatomy is obscured by the bleeding and the incisions through extra-urethral tissue. All anterior strictures should be cut to full size at the time of the external urethrotomy if the additional shock and hemorrhage does not jeopardize the patient's life.

I have been accustomed, for the most part, to drain the bladder with a full-sized soft rubber catheter passed through the entire penis in case both anterior and posterior strictures have been cut, or through the perineum, alone, when the anterior urethra is healthy. The catheter siphons off the urine and is removed in two or three days. Rarely are there chills or urethritis in this period. After removal of the catheter I usually delay three or four days before introducing a sound, when I pass first a small or medium size, followed at once by one of full size. By observing this rule for the first week or two the pain is much lessened and there seems to be less damage inflicted by the large sound. Sounds are not passed daily, but every third or fourth day, as I believe much harm is done by too frequent instrumentation. After discharge patients are directed to return every week for a month, and then at lengthening intervals up to once every six months or a year.

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Patients with extravasation belong to the most desperate type that we have to deal with. Their general condition precludes long operation, the gangrene and distortion of the perineal contents require a good knowledge of anatomy and the quick recognition of familiar landmarks in unfamiliar places. Any instrumental guides are fallacious because the urethra is apt to be full of false passages and it is much safer to search rapidly for the mucous membrane, to recognize and cling to it.

External urethrotomy alone for enlarged prostate has a limited place, but occasionally it is indicated for drainage, exploration, palliation, etc. No cases are included in this series where the urethra has been opened for enucleation of the prostate, as these form a class by themselves.

The end results in the present series are known in only a few instances. The patients belong, as a rule, to a dissolute, shifting class. Many do not follow up methodical after-treatment; others, in case of relapse, go from one hospital to another and rarely do they take interest enough to report when requested. As a life-saving measure, and for at least temporary cure of a most distressing and dangerous affliction there is no operation more satisfactory than external urethrotomy. The permanent results must be studied in a different class of patients and by those who have a firmer hold on their patients than the general hospital surgeon.

STRICTURE.

There were 25 cases of external urethrotomy for simple stricture of the deep urethra, combined when necessary with internal urethrotomy for anterior strictures. It is not necessary to report each case in detail.

The causative gonorrheal attack antedated the strictures from five to forty years. About half the patients had noticed symptoms of stricture for one year to sixteen years. Three cases had previously had a rapid dilatation or a divulsion and one of these had had in addition an external urethrotomy. One case had had an internal urethrotomy, the deep stricture existing at the time not being cut for some reason. One case had had an external urethrotomy performed nineteen years before his present operation by Dr. H. J. Bigelow, and another case had had a similar operation done five years before, all after-treatment being neglected.

The bladder was drained for two or three days on the average. The perineal wound closed in half the cases in from eight to twenty-five days. Many of the remaining patients were discharged at the end of fourteen to twenty-one days with a rapidly closing sinus through which there was slight urinary leakage. How many of these developed permanent fistulæ it is impossible to state; only one patient, reported elsewhere, came back for relief of this condition. It is fair to assume, however, that a great majority of those discharged leaking healed in a short time, judging from the behavior of the patients that were kept under observation until all leakage had ceased.

In the few cases that were followed for varying periods and that paid attention to the after-treatment, a commodious posterior urethra was found on examination. The number is too small, however, and the intervals too variable to make the observation of any value. About half the patients in this class entered the hospital with retention and dribbling.

Patients were discharged as a rule, taking a 28 to 30 French sound with ease. In a small penis 27 F. was considered large enough. No attempts were made to overstretch the canal. Two patients died. In one the operation without a guide was started by my house surgeon, who got lost in the dissection of a perineum full of cicatricial tissue. Finally, as there were no landmarks to go by, the bladder was opened by blind dissection. Sharp bleeding followed. A relapsing hemorrhage a few hours later necessitated a second search, and again the bladder was opened and a catheter tied in, but the patient steadily failed and died in a few days. Autopsy showed that the bladder had been opened from the right and above the urethra and that the bleeding had taken place from the space between the bladder and the ramus. Into this space urine had leaked. There was a slight beginning peritonitis, the bladder was small and empty and the urethra full of false passages. Had the urethra been opened on a guide passed from the bladder outlet the result would have been different.

In the second fatal case, a feeble, senile man of 65, the bladder was distended to the level of the umbilicus and all attempts to pass any guide failed, so the deep urethra was opened and the bladder drained. The urine had been offensive and often bloody for several years. The pulse was intermittent and the lungs full of râles. He rallied well from the operation and then steadily failed and died in two days. No autopsy was allowed. Probably a preliminary aspiration would have been safer in this case.

One patient had suppression three days after an easy rapid operation; it readily yielded to diuretics. One patient, an Italian, 58 years old, had an external urethrotomy secondary to a suprapubic cystotomy. At the first operation a small catheter drew off over half a basinful of pus and urine, leaving the fundus still at the level of the umbilicus. A suprapubic opening then evacuated quarts of foul pus, urine and blood. No prostatic enlargement could be determined at this time. A month later several anterior and deep strictures of large caliber were cut and the bladder drained by a catheter through the penis. A month after the second operation the patient left, against our advice, still passing cloudy urine from a bladder unable to contract fully and with a goodly quantity of residual urine due probably to a small but obstructing prostate. Prostatectomy and persistent drainage would probably have corrected the condition.

EXTRAVASATION.

This class is of interest because of the gravity of the condition, the difficulty of the operation and necessity for rapid and thorough treatment. It is well to bear in mind that extravasation is not necessarily a purely mechanical phenomenon; not a few cases have a perineum full of urine and pus where strictures of large caliber only exist.

Case 1.—Sailor, 30 years old. Had been divulsed three times, an operation as unsurgical as any that I know of. Entered the Carney Hospital very ill with a foul, swollen perineum and scrotum, which were freely opened and drained. After recovery from the acute sepsis, his strictures, anterior and posterior, were freely cut, the latter without a guide. In a few weeks he was discharged, taking a 29 F. sound easily and with a healed perineum.

Case 2.—A patient dying with rheumatism and cardiac disease, unable to lie down, with general edema and passing his urine in drops through a pin-hole meatus, developed an acute extravasation. Under ether carefully given a staff could be passed into the bladder and the deep urethra was freely opened, allowing the escape of foul urine, old clots and pus. Perineal drainage. Two days later a sharp hemorrhage took place, but was controlled by packing. On the following day the bleeding recurred from the deep sloughs and the patient died. In this case the operation was offered merely as a temporary relief to his urinary symptoms. It illustrates the feasibility of etherization in most advanced cardiac disease when the anesthetic is properly given.

Case 3.—Eighty years old. Treated for malarial chills for two weeks before surgical advice was sought. When seen he was delirious with gangrene of the scrotum and edema of the perineum and penis. Under ether a filiform could be passed through tight strictures at the peno-scrotal angle and over this a staff could be passed, on which the deep urethra was opened, giving exit to stinking pus. The corpus spongiosum, gangrenous and isolated, was found pushed to one side. The anterior strictures were dilated sufficiently to allow catheter drainage through the penis. Improvement followed, but in three months he developed a fatal broncho-pneumonia.

Case 4.—Forty-three years old. Had had his strictures rapidly dilated three times within fifteen years. His present trouble began with perineal swelling three weeks before entrance to the hospital, when a bulging perineum and edema of the scrotum was found. No guide could be passed into the bladder, so the deep urethra, necrotic and pushed out of place, was dissected open and the deep constrictions freely cut. A little later the anterior strictures were cut with an Otis uretheratome, and nine days later he was discharged, taking a 29 F. sound and passing a little urine through the rapidly-closing perineal wound.

Case 5.—Fifty-three years old. Had had dribbling for three years, for the last year it being constant day and night. A series of tight strictures throughout the urethra was found and no guide could be passed into the bladder. A small extravasation was found pushing the corpus spongiosum to one side. False passages existed in all directions. After the mucous membrane was identified the strictures were freely cut and the bladder drained. Discharged in a month, taking a 30 F. sound and with a closed perineum.

Case 6.—Forty-five years old. Symptoms of strictures for four years. Entered with an extravasation in the perineum, extending toward the groins so that the entire swollen penis was pushed forward from the pubes, the scrotum being wrinkled and not swollen. The deep strictures were impassable so that the canal was opened by dissection. Discharged without leakage in a month.

Case 7.—Forty years of age, with a deep stricture of large caliber, had a greatly swollen penis, scrotum and perineum. Operation. Good result.

Case 8.—Seventy-six years old. Entered with a gangrenous deep urethra, a deep stricture of 12 F. caliber and several tight anterior strictures. Operation. Good result.

FISTULÆ.

There were four operations for this lesion. Whether any cases belonging in other groups that were discharged from the hospital with a little leakage developed persistent fistulæ can not be told, but as patients were not allowed to leave until there was good evidence of a rapid, progressive closure of the perineal opening, it is fair to presume that this distressing sequela was uncommon.

Case 9.—Fifty-seven years old. Had had signs of stricture for four or five years. At entrance there was a peri-urethral abscess. Anterior and deep strictures were cut to 31 F. and a catheter tied in through the penis for three days. Two months later, the wound not closing properly, the anterior strictures, which had recontracted, were again cut. A month later he was discharged against our advice, still leaking a little and admitting only a 26 F. sound. Two years later, after treatment at various places with sounds, etc., he reapplied for operation for the fistula. He was urinating every 15 to 20 minutes during the day and six to ten times at night. At operation a 20 F. sound could be passed through the urethra as far as the fistula, which was found to be a direct continuation of the deep urethra lined with mucous membrane. This was dissected away and sutured with catgut after free division of all strictures. In four weeks he was discharged, taking a 30 F. sound, with a healed perineum and normal micturition. Without doubt in the early operation the strictures had not been properly and thoroughly divided.

Case 10.—Thirty years old; with a history of three attacks of gonorrhea; had had a perineal abscess, probably following a cowperitis opened by a physician eight months before entrance. He came in with a thick urethral discharge, and urinary leakage through a fistula opening in the left ischio-rectal region. Upon opening the bulb under ether, the sinus was found to start from an opening one-eighth to one-quarter inch in diameter in the side of the membranous urethra. The sinus was thoroughly curetted and the bladder drained through a perineal catheter, the sinus being packed with iodoform gauze. Nineteen days later he was discharged, taking a 27 F. sound and passing a few drops of urine at the beginning of micturition through the rapidly-closing sinus.

Case 11.—Thirty-eight years old. Entered the hospital with several sinuses in the perineum and scrotum, an abscess of the latter region extending leftward to the top of the pubic bone. Two years before there had been an acute retention with extravasation followed by rupture, the sinus closing spontaneously in one month. Again, eleven months ago, there was a repetition of the trouble, followed by several abscesses and fistulæ, lasting up to the present time. No guide could be passed beyond the bulb. The corpus spongiosum was found pushed to the right. All strictures were freely cut and the bladder drained. Eleven days later he was discharged, passing urine through the wound and taking a 28 F. sound. All trace of the patient was then lost.

Case 12.—Fifty-five years old. Had had a series of perineal abscesses, the present fistula dating its origin four weeks before operation. An easy combined urethrotomy on a guide was done and the patient discharged without leakage and taking a 30 F. sound in nineteen days.

TRAUMATIC RUPTURE OF THE URETHRA.

Case 13.—The first case, a man 50 years of age, fell, two days before entrance to the hospital, injuring the perineum. He lay unconscious for twenty-four hours before he was found by his friends. At entrance there was extensive swelling of the perineum with extravasation half way to the umbilicus and into both thighs. Operation by Dr. H. W. Cushing, who opened the bladder by the perineal route and established drainage. Five weeks later, as soon as his condition warranted, the writer attempted a repair of the damage. On opening up the perineal fistula that had persisted since injury, a blind pocket, anterior to the bulb and containing no urethral tissue for nearly an inch, was found at the site of injury. Posteriorly the torn end was closed by cicatricial tissue, the entrance to this portion of the urethra being on the side. Anteriorly the urethra was closed by cicatrix. Both stumps were opened in the median line, but the ends could not be approximated closely enough to be sutured, so a catheter was passed through the entire length and the wound allowed to granulate. He was discharged in six weeks, passing most of his urine through the penis. The urethra, kept open by the passage of a 28 F. sound, showed a strong tendency to contract. His later history is not known. Had the urethra been freely dissected anteriorly the stumps could have been properly sutured together in all probability.

Case 14.—The second case was brought to the hospital at once after injury and operated upon without delay. On opening the bulb on a staff much laceration of the spongy tissue and of the muscles was found. Nearly an inch of the urethra was destroyed. The lacerated spongy portion was sutured in the middle line with silk, but in the section where no urethral tissue remained the bulbous tissue was sutured over a catheter, the superficial tissues also being sutured, allowing for a temporary gauze drain. The catheter was removed on the third day and the patient discharged on the twenty-fourth day, taking a 28 F. sound and with a tight perineum. His later history is also unknown.

PROSTATIC HYPERTROPHY.

Although prostatectomy and suprapubic drainage will largely replace perineal drainage in cases of prostatic hypertrophy, yet there will always remain an occasional case where the latter procedure is indicated.

CASE 15.—Seventy-two years old. Entered the hospital very ill with hemorrhage and false passages into the scrotum and both thighs. The deep urethra was opened on a staff and the bladder drained through the perineum. Bleeding ceased at once, the wound slowly closed and by the end of two weeks the patient was discharged in good mental and physical condition, passing his urine normally at normal intervals.

CASE 16.—Seventy-four years old. Entered with a history of prostatic trouble for five years, with occasional retention, asthma and epididymitis. Under irrigation and medical treatment he steadily lost ground, the urine being very foul and the testes becoming gangrenous. Perineal drainage was established and the testes curetted, but he steadily lost ground and died six days later.

CASE 17.—Sixty-six years old. Entered with a distended bladder. Under irrigation he improved temporarily and refused operation until six weeks later, when perineal drainage was established. Ten days later diarrhea started up, he became delirious and died in a few days. Autopsy showed numerous sacs formed by giving away of the muscular wall and formation of hernia of the mucous membrane. These sacs communicated with the bladder by very small openings, mostly pinhole, all containing pus. Pus in both ureters and pelvis.

CASE 18.—Seventy-two years old. This patient had symptoms both of stone and of an enlarged prostate. As I could not pass a lithotrite through the urethra, the bladder was entered through the perineum and the prostatic urethra stretched with the finger until the lithotrite could be passed through the perineal incision and the stone crushed. A large, soft catheter was left in for a few days. Later it was passed through the penis and the bladder drained for seven days, the perineal wound closing shortly afterward. Since this operation three years ago another stone has formed, but the prostatic urethra has allowed free use of the lithotrite and the evacuator and by occasional irrigation the bladder keeps sweet and clean and free from phosphatic deposit.

CANCER OF BLADDER.

CASE 19.—This patient, a Frenchman, 48 years of age, had passed blood at intervals for two years. When he entered the hospital there was profuse bleeding, vomiting and very frequent, painful micturition. Operation was not allowed for three weeks, when, as he was rapidly failing and suffering intensely, the deep urethra was opened and a soft, pulpy mass curetted from the entire bladder wall. Hemorrhage stopped at once. He derived great relief from his suffering, but he was so weak from sepsis and loss of blood that he lived only four days. Had the operation been allowed earlier he could have been saved much intense suffering. Examination of the tumor showed papillæ with rapidly-growing epithelium and in addition large masses of epithelial cells in the deep tissues.

RUPTURE OF THE BLADDER.

CASE 20.—One patient with rupture of the bladder was drained through the perineum most satisfactorily. He entered the hospital with a fracture of the pelvis and a properitoneal hemorrhage, originating about the neck of the bladder. An attempt was made to drain by gauze over the pubes and with a catheter tied into the bladder through the penis, but it was not satisfactory, as the urinary leakage into the space of Retzius increased, so two weeks after admission the perineal urethra was tapped and drainage established. On account of the pelvic lesion the operation had to be done with flexion of only one thigh. Exploration of the bladder failed to show the location of the tear, which probably was a small one. After seventeen days the perineal drain could be removed and the bladder rapidly resumed its normal functions, the patient being discharged in good condition three months after entrance.

FOREIGN BODY IN PERINEUM.

CASE 21.—This patient, 53 years old, entered with acute retention, gangrene of the perineum and edema of the scrotum. He was alcoholic and septic. A sound could be passed into the bladder, but it forced foul pus from the meatus, showing that there was a perforation of the urethra in some part of its course. A history of many attacks of gonorrhea could be obtained, and latterly he had had severe pain for several days at the end of the penis, with urination once a day, when he voided a quart of urine without blood. At times the flow of urine would suddenly stop without increase in the pain, nor would the pain subside with an empty bladder. Under ether the perineum was freely opened with evacuation of foulest of pus and gangrenous masses. The bladder was then drained. The abscess cavity extended into both ischio-rectal fossæ, around the urethra and upward behind the pubes and completely around the rectum. In the left fossa a sharp pointed fishbone was found, evidently having escaped from the rectum. No history of its ingestion could be obtained. Much shock followed and in a few days he developed delirium tremens and died eleven days after admission.

GUMMA (?) OF AN ANTERIOR STRICTURE.

CASE 22.—This patient I saw five years ago with Dr. Dorman. He was 35 years old, had had a mild gonorrhea over twelve years ago and syphilis ten years ago, for which he was treated a few months. His wife had borne two healthy children and one anencephalic monster. He had noticed a small lump in the anterior urethra fifteen months before my visit, but it had increased only within the last four to six weeks. Recently the nodule had grown tender and erections were painful, the penis being curved forward. Three days before I saw him there was retention, relieved by passage of a small catheter. I found the prepuce slightly swollen, but capable of retraction. One inch from the meatus was a hard elastic swelling three-quarters of an inch in diameter, tapering posteriorly into the spongiosum, the overlying skin being freely moveable. Nothing could be passed beyond the tumor, but as the patient could urinate he was treated with hot applications and iodid of potash. Three days later, the swelling having increased and showing signs of breaking down, an incision was made on the under side of the tumor and a small, foul abscess evacuated. At the depth of the wound the urethra lay exposed, but not perforated, and laterally the original tumor could be plainly identified. Nothing could be passed beyond the tumor. Voluntary urination followed and the incision rapidly closed, but there was still pain during micturition at times and occasional chills, though the tumor was apparently subsiding for a couple of weeks, when he suddenly grew worse and entered the hospital. The whole penis had suddenly swollen to about twice normal and all attempts to pass the anterior swelling failed. Under ether the bulb was opened. No deep strictures were found, but at the penoscrotal angle two of a caliber of 20 F. were cut to 30 F. A filiform was then passed from behind through the anterior stricture, which was cut, first with a Maisonneuve and then with an Otis urethratome. On cutting through the scar tissue into the dense surrounding tissue a small abscess was opened. Not long afterward the patient was discharged, the tumor gradually disappeared, but whether or not on account of the persistent use of the iodid it is difficult to say. There has been no return of the trouble. Unfortunately a section of the tumor was not taken for examination, and it is impossible to determine whether it was a chronic inflammatory deposit around the stricture or a gumma, the former condition being the more probable, although at the time it had all the appearance and behavior of a gumma that had become infected.

IMPACTED CALCULI.

CASE 23.—Thirty-seven years old. Had had an external urethrotomy for stricture, probably gonorrheal, eighteen years ago. At the time of the present operation there was dribbling. On exploration through the perineum for what was supposed to be an impassable stricture, a stone one and a quarter by three-quarters of an inch was found impacted in the prostatic urethra with a perforation through which the urine passed from the bladder, and projecting anteriorly into the deep urethra was a spur three-quarters of an [illegible], lying against the mucous mem[illegible] body of the stone. F[illegible] main charged, passing a[illegible] was di[illegible] and [illegible]

Case 24.—About 60 years old; was treated for pneumonia for a week before admission to the surgical ward, when he was delirious, septic and in bad general condition. The bladder was distended to the umbilicus and constantly overflowing; no instrument could be made to enter. In the perineum was a hard, irregular tumor, supposed to be a beginning extravasation, but on opening the urethra a stone one and a quarter by three-quarters of an inch in diameter and facetted, with twenty-five small stones, one-eighth to one-quarter of an inch in diameter and more or less faceted also, was found lying in a sac lined with smooth mucous membrane, communicating with the urethra through a small opening in the anterior portion of the bulb. For a few days the patient was very ill, but he gradually improved, and at the end of three weeks was convalescent. The only history that could be obtained dated back thirty years, when he fell down the hold of a vessel and passed blood from his urethra. What little trouble he had had with his urinary organs he dated from this accident. At best, he was a stupid, ignorant Irishman and no better data could be obtained.

DISCUSSION

ON PAPERS OF DRS. LEONARD, ANDREWS, FULLER AND MUNRO.

Dr. Arthur T. Cabot, Boston—As five minutes is insufficient for the discussion of the four papers, I will confine myself to remarks on the first. We all know the difficulties of diagnosis in many cases of renal calculus. When the classical symptoms are present and the patient has passed bits of stone, the diagnosis is not difficult, but we have all had cases where the symptoms pointed to vesical or prostatic trouble, and yet entirely cleared up after the passage of a renal calculus. We also see many cases where we have distinct evidence that the trouble is renal, but have difficulty in deciding between tuberculosis, movable kidney, moderate hydronephrosis and renal calculus. There are cases in which, while the evidence is good as to the nature of the trouble, there is difficulty in deciding which kidney is affected. In these cases, we know the advantages of ureteral catheterization, and Dr. Leonard is doing good work in urging the importance of the use of the Roentgen rays in these cases. I think, however, that we must remember that while the evidence of the *x*-ray is so reliable when it is positive, especially when confirmed by successive examinations, that negative evidence even when constantly confirmed is not wholly to be relied on. Many stones have been removed from patients where with the greatest care the *x*-ray could not demonstrate them. It does happen occasionally that a stone is found which utterly escaped careful *x*-ray examinations. One *x*-ray plate should never be relied on even for a positive diagnosis and certainly not for a negative one. I have not had much experience in the use of the *x*-ray for the discovery of ureteral calculi. I saw one case in the practice of a colleague in which the picture was positively conclusive and the calculus was found exactly where the plate showed it, just above the brim of the pelvis. When the calculus has passed lower down into the pelvis, it is against a bony background and the use of the *x*-ray is thereby interfered with. Considering the other means of locating ureteral calculi, I have found the seat of tenderness in these patients to be a very accurate guide to the location of the calculus. Here again, when the calculus gets past the brim of the pelvis, it is more difficult to make it out. The rectal and vaginal examinations should never be forgotten in attempting this localization. I have had one case in which a large calculus was easily located just above the vault of the vagina in a woman. Cases of renal calculi are not ordinary emergency cases; we have time to study the symptoms as the patient is in no immediate danger. In ureteral calculi, however, the condition may be much more urgent and it may occasionally happen that while a very serious condition of anuria exists the symptoms are utterly insufficient to locate the calculus which is causing the trouble. In such cases, we have a last resort in an exploratory operation. With the abdomen open, the condition of both kidneys and of the ureters down to the bladder can be carefully studied. If calculi are found and located, they can often be intelligently operated on by an incision which reaches them from without the peritoneum and the median incision into the abdominal cavity adds practically nothing to the risk of the patient. To illustrate this, I will recite briefly a case which has already been published, but which may not be known by many of my hearers:

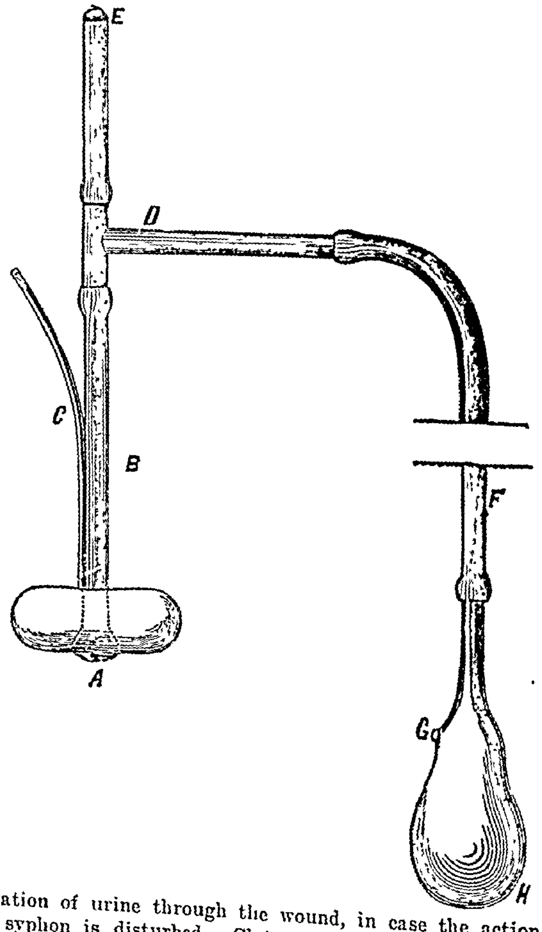
The patient was a man of advanced years who had during his life, at different times, passed calculi from both kidneys. At the time that I saw him, he had passed no water for six days, and the catheter introduced brought out one dram from the bladder. The pain in the attack had been so slight that he regarded it as a slight lumbago. There was no tenderness to be discovered and we had no guide as to the seat of the calculus. This was before the *x*-ray had been discovered. I did a median laparotomy, palpating the kidneys and the ureters. The right kidney was largely distended, but the left one was of normal size. I argued that the function of the right ureter had probably been interfered with years before, and that the left kidney, which was the useful organ, was now stopped by a calculus. With great care, I palpated the whole length of both ureters and then making a lumbar incision on the left side palpated that kidney and ureter between my two hands, one inside and the other out. I still could find nothing and was obliged to desist, but expressed the opinion at the end of operation that it was quite probable that my manipulations would start the calculus and relieve the patient. This hope was realized. Within the next twenty-four hours the patient passed two gallons of urine. Subsequently, I pumped out his bladder and obtained the fragments of a calculus which my examination of the ureters had undoubtedly dislodged. An interesting feature of this case was that two months later I was summoned to him again with another attack of renal colic located distinctly in the left side. Remembering the effect of palpation before, I did the same again through the abdominal wall and as a result the pain entirely ceased within a few hours. The next day he passed a calculus very much larger than the one which I obtained after the condition of anuria. This method of treatment by massage over the ureter is worth remembering in connection with the passage of these calculi, and I have used it with apparent benefit in other cases.

Dr. E. Blasucci, New York City—It would not be wise on my part to say anything on the subject under discussion were it not for the opportunity it gives me for some consideration on suprapubic cystotomy. At the present status of surgery the after-treatment of this operation is still a matter of serious consideration, owing to the difficulty we find in draining the urine out of the severed bladder and thus prevent the infiltration of it in the Retzius space and the pericystic connective tissue. Syphon-shaped tubes inserted through the wound into the bladder act merely as drains, and they can not accomplish the task of maintaining the bladder empty, which is the first requirement to avoid infiltration.

The causes of disturbance in bladder syphonage are only two, namely, encroachment of the bladder mucosa on the syphon eyes and penetration of air into the tube, both occasioned by the excessive action of the syphon. It follows, then, that the stronger the aspiration power of a syphon is, the higher the pressure of the urine must be to detach the bladder wall from the opening of the tube, and the larger the quantity of liquid that a syphon can discharge in the time unit, the easier for the air to penetrate the tube. Therefore, the *ideal syphon for* bladder drainage should be one in which the aspiration power is reduced to a minimum, in order to collect in the time unit exactly the same quantity of urine discharged by the ureters.

On this principle I have devised an apparatus whose distinctive characteristics permit it to accomplish the real action of a syphon. It consists of a rubber tube of *five millim.* caliber with very solid walls, divided into two parts: a short or vesical branch (B) and a long external one (F). The vesical branch has four large holes at its extremity (A) and carries an oval-shaped collapsible balloon with a small tube (C) to inflate it. The external branch carries at its end a glass bulb (H) with a very small opening at its upper part (G). The two branches are connected by a T-glass (D) whose third branch (E) is used for irrigation. The vesical branch is introduced into the cavity with the balloon collapsed; the balloon is then inflated through the small tube and this tied. The edges of the bladder and abdominal wounds are sutured close around the tube. The excessive length of the tube is cut off, the external branch connected and the syphon put into action, injecting liquid (through E). The glass bulb, immersed in a vessel containing sublimate solution, is placed one foot below the bed level. A roller bandage placed under the horizontal branch of the T tube prevents the lateral displacement, the bending and occlusion of the vesical branch. Owing to the great difference in size between the external and internal openings of the syphon, the aspiration power is reduced to a minimum, thus preventing the encroachment of the bladder mucosa to the internal opening of the instrument and the rushing of air through the wound and bladder into the syphon.

The inflated balloon kept adherent to the anterior wall of the bladder by the weight of the external branch keeps the viscus slightly distended and immobile, thus assisting the healing process. Furthermore, it checks hemorrhage, keeps the instrument in place by its own weight and prevents any filtration of urine through the wound, in case the action of the syphon is disturbed. Clots, shreds and detritus gather in the bottom of the glass bulb while the urine flows slowly and steadily through its upper opening.



I do not usually keep the syphon in place longer than three or four days, the time necessary to have good granulation of the surrounding tissues protecting against the infiltration of urine when the tube is removed. By removing the instrument at the proper time, the healing process is generally very active, and I have seen patients urinate through the urethra the very first day the bladder was freed from the instrument. In my last case complete cure was obtained on the tenth day, and I do not see any reason why I should recur to primary reunion of the wound, if I can obtain the same result with a safer method.

Dr. J. S. Horsley, El Paso, Tex.—Dr. Cabot mentioned a case of renal calculus that finally cleared up on the passage of a stone. There is also a large class of cases that is very difficult to diagnose, for they often have the classical symptoms of renal calculus without any stone. I had such a case three years ago in a woman fifty years of age on whom I operated. About nine months before the date of operation, she developed attacks of nephritic colic which were very painful, occurring at first about every week and later much oftener. A short while before the operation she was having several attacks in a day, the pain being on the left side in the back and radiating down toward the pelvis. There was constant tenderness over the left kidney. The urine contained albumin, pus and blood; also some hyalin casts and a quantity of renal and pelvic epithelium. Several months before the operation she passed a uric acid calculus. The case seemed so typical that I advised operation. No skiagraph was taken as an *x*-ray apparatus was not available in El Paso then. On cutting down on the kidney it was found to be large, probably twice its normal size, tightly bound by adhesions and higher than normal. The kidney was finally delivered in the wound, but no stones were found, although an incision was made into the renal pelvis which was thoroughly explored with the finger. The wound was treated openly and the kidney drained, the resulting fistula closing in a year. From the time of the operation till now the patient has never had another attack of nephritic colic.

Dr. A. J. Ochsner, Chicago—In discussing Dr. Leonard's paper I wish to emphasize the value of the segregator invented by Dr. Harris of Chicago, which is thoroughly reliable if it is carefully applied. I have used it in a large number of cases and the reason I speak of it at this time is because it supplants in almost all cases the catheterization of the ureter. I believe that the ureter is an exceedingly delicate apparatus and that except in very rare instances it is not wise to meddle with it. In any case it is not proper if it can be avoided by a simple and harmless machine like the Harris segregator.

As to the skiagraph for diagnosis in calculi of the ureter, my personal experience has been unsatisfactory, I believe, because it requires an expert to do the work. My work was done by one of the best men in Chicago, but whenever he has demonstrated the presence of a calculus it has usually been absent, and vice versa. The day before I came to this meeting he had demonstrated two beautiful calculi in the ureter. We had all made a diagnosis of appendicitis. The skiagraph was one of the most perfect I had ever seen. Notwithstanding the fact that I felt positive the patient was suffering from appendicitis I made an incision along the line of the left ureter. I made a thorough search for the calculi, which I finally found in the mesentery. The patient had tubercular mesenteric glands which had undergone calcareous degeneration. It seems that in order to be of positive diagnostic value the skiagraph should show the outline of the kidney itself very definitely, and on this the distinct shadow of the calculus.

I consider Dr. Andrew's paper one of great value, although I am not a competent judge because I have never considered the subject from this standpoint. We should bear this paper in mind and should study the conditions he has introduced. With the operation of prostatectomy by the perineal route I have had a most satisfactory experience in a number of cases since I have come to appreciate a few relatively simple conditions. It is, of course, necessary to have the bladder in as nearly an aseptic condition as possible at the time of operation, and to have the general condition of the patient improved as far as this can be accomplished before the operation.

I have made the horseshoe-shaped incision through the perineum, described by Zuckerkandl, through which the lower end of the prostate gland can be exposed perfectly. There will be considerable bleeding from the internal pudic arteries unless they are grasped with artery forceps before they are cut. These vessels are ligated and the lower surface of the prostate gland is thoroughly exposed by blunt dissection. The wound is now held open and an ordinary sharp cat's-paw retractor is hooked into one of the lateral lobes of the gland and the latter is drawn downward. The capsule of the gland is then incised on each side of the middle portion and then first one and then the other lobe is enucleated to a point near the middle, which is left until the last because the veins in this portion give rise to a considerable amount of hemorrhage unless they are compressed with gauze. If this portion is left until last it can at once be compressed with gauze and in this manner the entire amount of hemorrhage can be reduced to a minimum. In separating the middle portion care should be taken not to injure the anterior portion of the urethral canal. The points I desire to emphasize are:

1. The prostate should be well exposed.
2. It should be drawn down with sharp cat's-paw retractors.
3. The capsule of the right and left lobes should be freely incised.
4. They should be enucleated to a point near but not into the middle portion which should be enucleated last, care being taken not to injure the anterior portion of the urethra.

By observing these precautions this operation can be made relatively very safe and easy.

Dr. James E. Moore, Minneapolis—Following the example of the other gentlemen, I shall limit my discussion to one paper, that of Dr. Andrews. The matter of prostatectomy was before us at the meeting of the American Surgical Association last week and it is a real live topic. We owe much to Dr. Andrews for demonstrating that the size of the prostate is not the whole cause of obstruction and I have a number of post-mortem specimens which show this to be a fact. Clinical evidence of obstruction is not always in proportion to the size of the gland and even contracted glands may give rise to obstructive symptoms. I believe the Doctor strikes the keynote of advance when he recommends partial prostatectomy. As time goes by we are able to get permission to operate on these patients at an earlier age and we shall then have to preserve the generative functions. It is possible to make a partial prostatectomy and keep clear of the urethra, but usually you want to open it. You can perform a partial prostatectomy and preserve the seminal duct. I believe we shall do this more and more in the future, but the urethra, as Dr. Andrews says, is almost always opened. I did a partial prostatectomy on one side last month, removing all of the lateral lobe on the left side but only a part on the right. The Doctor's attitude towards the proper route to take when attacking the prostate is ideal. We are not idealists except in theory and we are very prone to go to one extreme or the other. Most of our operations have been done suprapubically, but we do not do the operation very often because the patients die. The Doctor's suggestion that we select the route particularly applicable to the case is a good one, but I am sure we are not going to be practical in this respect. I believe that the perineal route will be the route of choice in the future and to those who have not employed it I recommend it. You will find that instead of being a difficult and trying procedure it is a very simple one and you will be surprised to learn how easily you can remove the prostate this way. You can do it quickly and easily, which is a great advantage. The development of this branch of surgery was very beautifully demonstrated at the meeting of the American Surgical Association last week. Men who know the most about this subject spoke and they said their early operations were suprapubic, but they were not satisfied with this. Drainage is not satisfactory unless they made a perineal opening. Some of the cases died septic because there were large holes through the bladder. We should attack it from below as it is not the bladder that is at fault. According to the experience of those gentlemen, they said the suprapubic route was unsatisfactory and they have begun to treat from below. All of them finally settle down to the fact that the route of choice was through the perineum because it avoided all the dangers of the bladder. This is an innocent organ and the lower operation is so easy of execution.

Dr. James B. Bullitt, Louisville, Ky.—In discussing Dr. Fuller's paper, I would like to report one case in illustration, showing what serious things may result from pus being pent up in this neighborhood. The patient was a young man to whom I fell heir at the hospital and he was in a desperately ill condition. He entered the hospital a few weeks before, having been aspirated outside the hospital for retention of urine. After entering the city hospital he was again aspirated and gradual dilation of the urethra followed. The urethra became patulous, but dulness extended almost to the umbilicus. The tumor looked like an over-distended bladder, but knowing that it was perfectly empty was evidence that the collection was extravesical and extraperitoneal. The situation of the puncture which had been made before gave some information and an incision above the pubic arch gave out pus. The bladder had been dissected loose from its pubic attachments so that the finger went back against the rectum. On carrying curved forceps down, the perineum was made to distend. This place was selected for the incision and the opening was dilated with forceps. A drainage tube was passed all the way through. He made a very satisfactory convalescence and uneventful recovery. The indications were so absolutely plain by the natural course of the dissection of the pus that the blind finger readily found it.

Dr. John B. Murphy, Chicago—Dr. Andrews has outlined the perineal route which is the one of favor at the present time. There is an element in connection with the development of the urethra in enlargement of the prostate which must not be forgotten. In an enlargement of the prostate there is always an enlargement of the urethra and if you will notice the literature you will see that there have been a number of perineal fistulæ. As the prostate enlarges the urethra enlarges and if a complete prostatectomy be done and the posterior urethra is divided and partially removed this will be very different. It is true, in making this dissection we avoid perineal fistula. I was surprised to find that there was a diminutive bladder formed outside of the urethra and when this was full the patient would press on the perineum and empty the bladder. As to the incision, it must avoid a division of the septum. When the rectum is displaced forward a central division is made, but it is not necessary to attack the vessels in the middle of the prostate. I always divide far from the septum. In the fourteen operations I have done, thirteen were by the perineal route and the other one by the suprapubic. The enlargement of the so-called middle lobe is sufficient to justify its removal in some cases, but where I did this by the suprapubic route I was seven weeks getting the patient out of the hospital. The abdominal route requires a much longer period of convalescence. Drainage is very important in these cases. Hemorrhage may be controlled in two ways, by compression and by forceps.

Dr. A. H. Ferguson, Chicago—Perineal prostatectomy is a live subject. I have discarded the suprapubic route and will not return to it unless I am stuck by the perineal route. The pathologic conditions that I have found have been interesting. I make a perineal section, get the finger into the bladder, pass in the forceps, take the prostate out entirely or piecemeal. This is comparatively easy and simple. This operation should be done when the middle lobe is enlarged and the two lateral lobes are not. I have had enlargement of both lateral lobes in a number of cases with or without the enlargement of the middle lobe and on these I operate by the median incision. Those large incisions going from one side to the other I don't like, as the traumatism is too great. It is unnecessary to destroy the pelvic floor and in using hooks there is danger of getting into a plexus of vein. I put one finger in the rectum and pass the knife in until I touch the apex of the prostate when one sweep of the knife is sufficient. With a couple of retractors the structures are drawn laterally to each side. The finger is put in again and the enucleation is carried on. So soon as this is done sufficiently to use the forceps I do so. I then put in a sound and having gotten into the prostatic urethra I pass the finger into the bladder. You can enucleate with the finger and you can use your forceps to take it away piecemeal. You do not destroy the sphincter action of the bladder, but pulling it down with those hooks is dangerous. The reason Dr. Murphy gets a secondary bladder is because he gets a leakage from the first bladder. I have had 21 cases without a death or a bad result, the ages varying between 49 and 82. I have had them with stones in the bladder and all the other complications. I operated on three cases at Quincy where I had no time to prepare for the operation. One case was where the testicles had been removed and one was in a man 82 years old with a hernia. I operated on the hernia first and then on the enlarged prostate. The other had been operated on by the suprapubic route. In none of my cases did I get a secondary bag in the urethra. In one case the urethra was very small.

Dr. W. J. Mayo, Rochester, Minn.—I wish to add my testimony as to the value of the Harris segregator in cases where the bladder is fairly normal. I wish Dr. Andrews would go a little further into his results. As to Dr. Leonard's paper, one point he brought out was that in a large percentage of cases the stone was in the ureter and not in the kidney. My own experience leads me to believe that this is true. As to the possibility of stone in the ureter resembling appendicitis, I have cut down once for disease of the appendix and found a stone in the ureter.

Dr. Hugh H. Young, Baltimore—Dr. Leonard has brought out much valuable material and deserves great credit for the excellent work he has done with the *x*-ray. Calculi of very small size can undoubtedly be seen if the radiograph is properly taken, and no operation should be undertaken in nephrolithiasis without a previous *x*-ray examination. But of even more importance is the cystoscope, in order to determine the presence of an opposite functionating kidney, which can take up the work of the two after operation. It is not necessary always to catheterize the ureters. If, with the plain cystoscope, we see blood coming from one side and clear urine ejected at normal intervals and in sufficient amount from the other, we may be certain as to the affected side and the practically normal condition of the other. But ureter catheterization, even in the male, is no difficult procedure, and it gives invaluable evidence as to the condition of the two kidneys which nothing else will show. In view of the fact that a calculus which has completely blocked the ureter may lead to a gradual atrophy of the kidney without furnishing a single symptom of what is occurring, it is important, after the cessation of attacks of renal colic, to determine by the cystoscope that the ureter is not blocked, the kidney functionating. If the ureter is blocked, operation is necessary to save the kidney from utter destruction.

Both the cystoscope and *x*-ray may occasionally lead to error, as in a case of mine in which the radiograph showed a stone in the right kidney and the ureter catheters obtained purulent urine from that side, but clear urine from the other. This calculus was removed, but the patient died of uremia, and autopsy showed a long kidney on the left side with a bifid ureter and two distinct pelves, in the upper of which was a stone tightly impacted and so high up that it was above the level of the *x*-ray plate. The ureter catheter had tapped the lower pelvis which was healthy, thus obtaining clear urine. But such cases will rarely occur.

In the lengthy discussion which has already been given to the subject of the prostate, I am sorry not to have heard one word about the Bottini operation. We have heard nothing but prostatectomy. We are led to believe that this major operation is so free from danger that it can be performed on any and all cases.

There is no question but that radical enucleation of the prostatic lobes can be easily done by both the suprapubic and the perineal route, and in suitable cases with perfect results. In fifteen prostatectomies I have had but one death, attributable to the operation, and in this case the patient had double pyelitis and should not have been subjected to so grave an operation. If we could get these patients early, prostatectomy would rarely be fatal and our results would be radically curative. But we do not get them thus. In eighty cases of hypertrophied prostate which I have treated, the majority have been over seventy years of age, and often in such weakened condition that the mere anesthetic necessary for prostatectomy would almost certainly have killed them if the operation had not. The failure to recognize this fact has, in my opinion, been responsible for the high mortality shown by collected prostatectomy statistics. These statistics have been lost sight of in the recent wave of enthusiasm over perineal prostatectomy which has spread through our surgical community, and this present fad will surely have to answer for many deaths in the near future. Now, the Bottini operation is not an ideal procedure—radical removal of tumors is always the prettier operation. But the Bottini operation can be done in a few minutes under local cocain anesthesia with the loss of but little blood and often none. The wound is sealed by the cautery and sepsis can rarely occur. The result is generally immediate; catheterization usually never being necessary after the operation. If careful cystoscopic examination has been performed the operation is no more in the dark than prostatectomy.

I am not surprised that the cautery operation does not appeal to the general surgeon who has not had a chance to study carefully its workings and who does not often use the cystoscope. I, too, performed only prostatectomy until forced to use the Bottini by an encouraging literature, and the presence of desperate cases in very old men on whom I realized prostatectomy would mean certain death. I have now operated by electro cautery on something over fifty-five cases with but three deaths, and in two of these pyonephrosis was present. The ultimate results have been excellent, often immediate, and some of the cures truly wonderful. The patient has frequently been out of bed on the second day and left the hospital in a week. I have had three patients over 80 years of age, nineteen over 70, without a death. I feel certain that prostatectomy would have had a high mortality in these cases. There were also a number of cases of the small sclerotic variety in which the prostate was too dense to be enucleated and in which the simpler Bottini proved sufficiently radical. When I find a patient in fair condition for operation, and with an enucleable form of hypertrophy, I perform a complete prostatectomy and feel sure of perfect results; but when he is old and feeble I do not think I can in justice to him attempt such a major operation, when I know what splendid results can be obtained by the *much less dangerous* Bottini operation. The combined electro cautery instrument (which I described in The Journal, Jan. 12, 1902) with its multiple blades make the procedure a very accurate and more certainly successful one than the previous single blade afforded. I am so thoroughly convinced of the *splendid* results obtainable by the Bottini operation that I can not sufficiently express my disgust of those who, never having tried it and ignorant or wilfully neglectful of its extensive and thoroughly convincing literature, continue to condemn the procedure. Such men are perverters of scientific truth and a menace to surgical progress.

Dr. Parker Syms, New York—When I first entered on this field of work there was scarcely such a thing recognized as perineal prostatectomy, most of the work being done by the suprapubic route. My own impression was that the large mortality was due to too much being done to the patients at the time of operation and too much required of the patients during the period of convalescence. The journals are full of articles on perineal prostatectomy and I am delighted to see that the results bear out my opinion of years ago. It is the safest procedure. As to the Bottini operation, it is certainly a thoroughly unsurgical procedure. It was definitely decided long ago that we must not do an internal urethrotomy on account of the lack of safety to the patient. I believe that the perineal prostatectomy, as compared with the Bottini operation, is a radical permanent cure, while the Bottini is a permanent cure in only a certain proportion of cases. It so happens that I expect to do a prostatectomy if I can on a man who has been subjected to his fourth Bottini. He has undergone these operations at the suggestion of one who is most skilful and most renowned in this field of work. As regards mortality, I believe that when our methods are perfected and our personal experience has increased the radical procedure of removal of the prostate by enucleation will be found to be much safer than the Bottini operation. Whenever we have a patient and the question arises as to his ability to withstand a severe operation we shall decide that the perineal is the least severe of the two. I am interested in the various methods proposed for perineal prostatectomy and especially in Murphy's and Ferguson's work. Their results have been excellent. As to my own work and my own modification of the method, I aid the operation by the introduction into the bladder of a collapsed rubber ball attached to a long rubber stem. This is introduced into the bladder through an opening made in the membranous urethra. I dilate to about 2½ inches, the stump is clamped and the bulb acts as a retractor. This aids by pushing the prostate slightly downward and it also is a valuable adjunct to prostatectomy in that as fast as one portion is removed the side collapses. As to my results, I have operated on 20 cases and not only has there not been any deaths but it has been without any serious impression whatever on the patient. My patients are up on the fifth day and are walking about on the sixth or eighth day. My final healing has been slow in some of the cases, but the men have been immediately relieved and there has been no case of sepsis. I think I am right in saying that there has been no case in which the man has not been much better 24 hours after the operation than he was one hour before it.

Dr. Leonard, in closing—As to the accuracy of the negative diagnosis by the Roentgen method, my diagnosis has been found incorrect in only 5 cases out of 254 examined. An error of less than 2 per cent. compares favorably with any other surgical diagnosis. In one case the calculus was in the upper calyx of the left kidney and was lost in the way Dr. Young described, through faulty technic, the plate was not placed high enough and the shadow of the calculus was cast above it. In the 4 other cases the calculus was so small that it subsequently passed. In no other case operated on has a calculus been found where a negative diagnosis had been rendered. In two or three cases the operator has failed to find a small calculus shown in the negative. The negative diagnosis has been confirmed by operation in 75 to 100 cases. The others have not been subjected to operation. The value and accuracy of the method is also attested by 14 cases in which this method has determined the exact location and size of small calculi and rendered an expectant line of treatment rational and safe. In these 14 cases the calculus was subsequently passed without operation. To avoid the superposition of the calculus shadow over that of the bones the light is sent obliquely through the pelvic outlet. However, the calculus shadow can be detected through that of the bones since it adds density to that of the bone shadow. Small calculi may be crushed during operative manipulations and overlooked. A positive diagnosis may thus be made to appear at fault. A Bigelow evacuator should be used before operating to see that the calculus has not entered the bladder, and after operation if the calculus is not found, as it may have been crushed and have entered the bladder.

The cases reported by Dr. Mayo confirm the opinion expressed that ureteral calculus can be easily mistaken for appendicitis, and show that where a doubt exists the Roentgen diagnosis should be employed. Urinary fistulæ, subsequent to a nephrotomy in which calculus was suspected but not found, have resulted in two cases in which calculi were found by the Roentgen method blocking the ureter.

Dr. Andrews, in closing—I would like to interest the gentlemen in this method of mine which I have tried three times and the technic as worked on the human subject must be modified as compared with animals. The incision differs very little from a perineal incision and extends a little further forward than Ferguson's incision. I did not know how much of the prostate I cut away in some cases. It is not easy to save the internal pudic artery and those large branches running to the bulb. I was obliged by broad ligament forceps to clamp the whole urogenital floor. The three cases have recovered without the slightest bad effect. One case was one of total obstruction of long standing, but I have lost sight of the second case. In the third case I removed one-quarter of the gland. The prostatic capsule seemed to open and I am sure that a great deal of the constriction had been removed. I believe our efforts should be not to avoid destruction of the urogenital diaphragm or pelvic floor which is formed largely by the levator ani muscle. We should intentionally destroy on one side and in front. Your pelvis drops, your retroprostatic pouch is abolished and this is a very curative element.

Dr. Fuller, in closing—Most of the discussion has turned to the prostate and this is certainly a more burning point than the paper I read. I am extremely glad that the general profession are waking up to do something for prostatic hypertrophy. I was sorry to hear Dr. Young speak against the so-called furore. I suppose that one-half of the cases I have operated on have been pronounced bad cases; too bad, in fact, to warrant a radical operation. As long as the case lives and is not moribund I feel that prostatectomy is justifiable since death surely ensues if nothing is done. As to the Bottini operation, the authority for the procedure is lessening in this country and in a little while I expect the procedure will become quiescent and remain so perhaps for another twenty years. A short time ago many loudly proclaimed that stricture could be cured by electricity. Where are they to-day? You can' get, many times, immediate results from the Bottini operation, but if you will follow your cases for months or a year or so you will find you did not get the good results you thought you did. As to the method of taking out the prostate, I have been interested in Dr. Andrews' paper. I do not like, however, extravesical operations. The correct thing is to open the bladder rather than to spare it. How many patients that come for operation have sterile bladders? Ninety-nine per cent. have infected or putrid bladders. If you do not drain the bladder I think it is risky. In select cases where you have a clean bladder it may be safer to avoid draining it. Some of the gentlemen have condemned suprapubic prostatectomies. I have probably done as many as anybody and I do not get a high death rate. In my last 18 perineal prostatectomies I have lost but one case. I, however, do suprapubic prostatectomy more frequently than perineal prostatectomy.

Dr. Munro, in closing—I have tried various methods and I believe thoroughly in prostatectomy. It is an operation that has come to stay. At the Boston City Hospital at least 50 of these operations have been done, and the results are growing better all the time. I want Dr. Ochsner to leave Dr. Murphy's operation and go back to the median perineal incision with enucleation. Almost any prostate can be removed in this way, I believe, but you must get your finger in the right layer. If you do so the hypertrophies will pop out. I want to suggest something to Dr. Young, who says that some cases are too sick to stand a prostatectomy. If he will drain them suprapubically for days, or weeks, if necessary, until the kidneys get their balance, he will be able to do a prostatectomy without danger. The perineal or the suprapubic enucleation in suitable cases is so much better than the Bottini, from the point of view of the general surgeon, that I am sure the latter will eventually become an operation of the past.

TRAUMATIC RUPTURE OF THE ABDOMINAL VISCERA WITHOUT EXTERNAL SIGNS OF INJURY.*

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My object in selecting the above subject for this year's meeting of the Association is to call the attention not only of surgeons, but also of the general practitioner to the necessity of making an early diagnosis and instituting prompt operative treatment in those serious injuries of the abdominal viscera in which there are practically no external signs of trauma. Various terms have been used for this condition, such as contusions of the abdomen, subparietal or subcutaneous injuries of the abdominal viscera or internal injuries. The term I have employed as the title of this paper seems to express the pathologic and clinical conditions better than any of the above.

NEED OF BETTER DIAGNOSIS AND TREATMENT.

It seems rather strange that so little interest, comparatively speaking, has been shown in the diagnosis and treatment of this class of injuries and so much in those in which there are external signs, such as gunshot and stab wounds. It is to be greatly deplored that such cases are only too frequently, even at the present day, hastily examined, the diagnosis of internal injuries made and left to take their chances of surviving a peritonitis either from the escape of intestinal contents or infection of an intraperitoneal or retroperitoneal hematoma or of succumbing to a gradually increasing internal hemorrhage within a few hours. Many a life could have been saved which was sacrificed through careless and superficial examinations and diagnosis, or perhaps the lack of courage in performing an exploratory laparotomy at the proper time.

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STATISTICS AS TO FREQUENCY.

Various statistics show that these injuries of the abdominal viscera without external signs are almost twice as frequent both in civil and military practice as those due to penetrating violence. Edler in 1885 found that in 362 cases of injuries of the liver 184, or 50 per cent., were without external signs; 116, or 32 per cent., were gunshot; and 62, or 17 per cent., were stab wounds. He also collected 160 cases of injuries of the spleen; 83, or 51 per cent., were due to injuries producing no external signs; 42, or 26.2 per cent., were gunshot; and 35, or 21.8 per cent., were stab wounds. In 152 cases of injuries of the kidney, 90 were without external signs, 50 gunshot and 12 stab wounds. The following tables of Makins (St. Thomas' Hospital. London), and Neumann (Friedrichshain, Berlin), will give an idea of the frequency with which the individual viscera are injured:

Makins (89 Cases).

	Cases.	Per Cent.
Kidney	35 or	39.3
Intestine	21 or	23.5
Liver	15 or	16.8
Spleen	10 or	11.2
Bladder	4 or	5.6
Mesentery	3 or	3

Neumann (54 Cases).

	Cases.	Per Cent.
Intestine	21 or	38 8
Kidney	10 or	20.6
Liver	6 or	11
Spleen	4 or	7.4
Liver and Spleen	4 or	7.4
Omentum and Uterus		
Spleen and Kidney.	2 or	3.7

SURGICAL ANATOMY.

It will be seen that ruptures of the kidney and intestine form over 60 per cent. of the total according to these statistics taken from two different hospitals. This is to be explained partly by the surgical anatomy and partly by the most frequent varieties of trauma which produce these injuries. In regard to the former (surgical anatomy) it may be said that the intestines lie in close contact with the greater portion of the abdominal wall, especially the jejunum and ileum, which are most frequently injured. The duodenum lies very deeply in the abdomen and is fixed at its junction with the jejunum. The ascending and descending colon lie well protected by coils of small intestine. The stomach when empty lies like the duodenum at the back of the abdomen and is little exposed to injury. When distended it is far more so, although the ligaments suspending it will permit of a great range of motion. The kidneys lie well behind all of the other viscera, being separated from them by peritoneum. They are very insecurely suspended, their chief fixed point being at the hilum through the unyielding renal vessels. On the side and behind they are poorly protected by the quadratus lumborum and transversus abdominis muscles and floating ribs. On the inner side they are in close contact with the resistant transverse processes and bodies of the vertebra. The liver and spleen are fairly well protected by the bony thorax. They both lie in close contact with it, being separated in part by the diaphragm and lungs. The spleen has a greater range of motion than the liver on account of the greater length and elasticity of its ligaments. The liver is a more fixed organ, its supports being firmer and shorter. Its large size, friability and greater fixity render the liver especially liable to injury. The pancreas and gall-bladder lie so well protected that they are comparatively infrequently injured. For a similar reason the ureter has often escaped injury when the kidney has been extensively torn. The bladder is covered by peritoneum only in part (fundus and posterior wall), it being to a considerable extent an extraperitoneal viscus. It is very firmly attached to the symphysis pubis so that fractures of the pelvis are frequently complicated by a rupture of the bladder, almost invariably extraperitoneal. The bladder when distended rises out of the pelvis and lies in close contact with the anterior abdominal wall.

MECHANISM OF INJURY.

The manner in which the force acts is either directly or indirectly. In the former case (direct) it is of importance to obtain a history of whether it was a circumscribed (kicks, blows, falls upon objects) or a diffuse force (run over, crushing injuries, etc.). The circumscribed is more likely to rupture hollow viscera like the stomach, intestine or bladder. The diffuse more frequently causes a rupture of the solid viscera like the liver, pancreas, spleen and kidney. There are, of course, exceptions like my spleen case, where a hammer was thrown at a boy's abdomen, rupturing the spleen. In general, however, the above division will be of considerable value in diagnosis. In 20 cases of circumscribed force, 13, or 65 per cent., had perforation of intestine. In 28 cases of diffuse force, 15, or 53 per cent., had intestinal lesions (Neumann). In 33 cases of rupture of the liver treated by laparotomy which I collected, 16 were due to a crushing injury (diffuse force), 9 to a kick or blow (circumscribed force), and in 8 it had occurred after a fall. In 47 cases of rupture of the spleen it was due to a circumscribed force (kick, blow or fall upon some object) in 25, to crushing injuries in 11, and to a fall from a height upon the feet or buttocks in 11. In injury by indirect force the organs most frequently affected are the liver, spleen and kidney. This occurs after falls on the head, buttocks or feet, the organ following the line of action of the force and then in rebounding being torn, as frequently occurs in the case of the liver, at the attachment of its ligaments or as in my cause of traumatic displacement of the kidney from its surrounding connective tissue.

In direct action of force the injury may occur in one of three ways: (*a*) crushing, (*b*) bursting, (*c*) tearing. In the first variety the viscus is crushed between the force and some resistant part of the body (spinal column, pelvis) or an object (a wall, ground, etc.). This is by far the most frequent manner in which the viscera are ruptured. The second variety, that is, bursting, occurs less often than was formerly believed. The organ is distended to its utmost through pressure and then gives way. The third or tearing occurs when the viscus is torn at its point of attachment, for example, rupture of the intestine at the duodeno-jejunal junction, rupture of liver along suspensory ligament, rupture of stomach along lesser curvature.

It is an inexplicable clinical fact that the same amount of force may produce the most serious lesions in one case and none at all in another. This should, however, not give a false security and permit taking too great a chance with an expectant treatment. When statistics like Makins' (St. Thomas Hospital, 1889-98) show that out of 292 cases of abdominal injuries (without external lesions) of all degrees of severity there were 89 or nearly one-third of ruptures of viscera and Neumann's (Friedrichshain, Berlin) 133 cases with 62 ruptures, and if these are to be given any value, we can never feel justified in treating every case by a waiting plan.

PATHOLOGY.

The pathology differs in the solid and hollow viscera. In the former the following may occur:

(*a*) Subcapsular tears. Here the capsule is not torn.

(*b*) Laceration of the parenchyma with tear of capsule. This may vary from a slight tear to deep ones completely dividing the organ. It may cause portions of the organ to be completely separated or may even reduce it to a mere pulp, especially in the kidney.

(*c*) Rupture of the principal blood vessels of the viscus, resulting in rapid death. In general, if an organ is in a pathologic condition it is more liable to rupture (malarial spleen).

In the hollow viscera, like the stomach, intestine, bladder (gall and urinary), bile vessels and ureter, we may have:

(*a*) Simple contusion of one of the coats, especially the mucous, causing the formation of an ulcer (traumatic gastric ulcer) and leading either to perforation or becoming an atrium of infection (traumatic appendicitis).

(*b*) Perforation immediately after the injury. The seat of perforation is usually at the antemesenteric border in the intestine; it may be a simple tear or a circular perforation (the latter is especially frequent after horse kicks).

Of 219 cases of injury to the alimentary canal, Petry found 172 were in the small intestine, 26 in the large and 21 in the stomach. The wound does not close in the majority of cases because the mucosa prolapses between the edges. Rarely it becomes adherent to the adjacent viscera. In the bladder the tear is usually vertical and through all of the coats. In the intraperitoneal variety, which is by far the most frequent, 183:119 (Rivington), 90:45 (Mitchell-Alexander), the tear is at the fundus or on the posterior wall. The extraperitoneal variety is often complicated by a fracture of the pelvis (in 169 cases collected by Bartels, 109 times), and the situation of the tear varies somewhat with the point of fracture, being most frequent around the neck of the bladder.

COURSE AND SEQUELÆ.

The course of these injuries, if not treated, is as follows:

(*a*) Small tears in the solid viscera may heal without further symptoms.

(*b*) Deeper tears either continue to bleed until the patients die of acute anemia or a clot may close the tear temporarily or permanently. In the former case the bleeding recurs through the dislodgment of the clot from days to weeks after the injury. For permission to publish an example of this termination, I am indebted to Dr. M. L. Harris of Chicago. On Dec. 3, 1900, Mrs. B., aged 20, was thrown violently against some object during an explosion. She was admitted with symptoms of rupture of the liver and although critically ill for a few days, the expectant treatment was continued. She improved so much after the fifth day that she was allowed to sit up on the eleventh day. She was taken with sudden epigastric pain and died in a few minutes. At the autopsy the abdomen was filled with clotted and fluid blood which had escaped from a ragged (1½ inch long) wound of the liver.

In 143 cases of death from rupture of the liver, hemorrhage was the cause in 59 (Mayer-Bryant). But when the bleeding stops permanently the patient is still exposed to danger from infection of the clots through migration of bacteria through the intact intestinal wall in the case of the liver and spleen or in intraperitoneal rupture of the kidney. In addition to the latter, the sequelæ of injury of the kidney are hemorrhage into the *perirenal* tissues, with subsequent suppuration, blocking of ureter (*pyonephrosis* or hydronephrosis), chronic nephritis (I observed this in one case 30 years after an injury) or displacement of the kidney. The following case, which occurred in my practice, is an example of the latter. A boy of 14 fell on the buttocks; hematuria for two days, accompanied by severe pain over right lumbar region. The hematuria ceased, but pains over right side of abdomen and a feeling as if something fell inside of him. I saw him on account of the latter symptoms two weeks after the injury and found the right kidney distinctly palpable and displaced downwards. This was verified at subsequent nephropexy. Out of 67 deaths due to rupture of the kidney, collected by Küster, 5 died of shock and collapse, 30 of hemorrhage, 27 of suppuration, 3 of chronic nephritis. and 2 of calculi.

(*c*) In the hollow viscera the possible terminations if not operated on are:

1. In injuries of the gall-bladder and bile vessels, escape into the peritoneal cavity. If, as is usually the case, the bile is aseptic, it simply accumulates or causes an adhesive peritonitis. Usually cholemia or secondary infection causes death. Out of 34 cases collected by Courvoisier 22 died.

2. In the alimentary canal peritonitis develops early after perforation has occurred; it is more likely to be fatal after escape of intestinal than of stomach contents into either the general peritoneal cavity or into the retroperitoneal tissue (ruptures of duodenum). Out of 160 cases of rupture of the small intestine 11 recovered (10 with formation of fecal abscess and one closure of perforation by omentum). The remainder died of septic peritonitis. Of 26 perforations of the stomach 13 recovered spontaneously and 13 died. In the case of the stomach there are a number of cases where an ulcer was formed. In the case of the appendix the development of an abscess, etc., must be due to the formation of an ulcer with subsequent infection. That there is such relation of trauma to appendicitis is now well recognized (Neumann, Korte and Shotmuller) and is illustrated by the following case: About three years ago I was asked by Dr. H. S. Barnard of Chicago to see a case with the following history: A butcher, soon after falling or stumbling against a large block of wood upon which the meat is cut, experienced a sharp pain in right iliac region where he had been struck by the edge of the block. I saw him five days later, and confirmed the diagnosis of appendicitis and at operation found the gangrenous appendix lying almost free in an intraperitoneal abscess cavity.

3. In the three verified cases of rupture of the ureter (Poland, Mackenzie and Morris) there was extravasation of urine around the kidney in two and into the peritoneal cavity in the third.

4. In ruptures of the bladder not operated on the following occurs: In intraperitoneal rupture peritonitis develops on the second or third day. In the extraperitoneal variety there is after about the same lapse of

time an infection of the cellular tissue (perivesical phlegmon). The urine of a normal individual is sterile, but soon after becomes infected through the use of the catheter, which is unavoidable in these cases.

SYMPTOMS AND DIAGNOSIS.

One of the most difficult problems in the first hours after an injury to the abdominal viscera with slight or no external signs, is to determine whether the case is one of simple contusion of the abdominal wall alone or of rupture of one or more of the viscera. It may be said at the beginning of this portion of the subject that there are no truly pathognomonic symptoms. The primary shock may be very severe and all of the early symptoms point to a serious injury, and yet they may gradually pass away. On the other hand, one meets occasionally with cases which begin in an apparently mild manner, and yet inside of 24 to 48 hours the most grave symptoms may appear and intervention be of no avail. It is just this deceptive character of the symptoms which has so greatly retarded the general knowledge of these conditions. It has caused many a surgeon or general practitioner who erred on one side or the other to hesitate to intervene.

There are certain cases in which, in the early hours, it will be almost impossible to make the distinction. There are, however, a large number of cases in which a careful analysis of the symptoms will enable one to arrive at a definite diagnosis sufficiently early to be of aid in the treatment. There are four possible conditions in which we find the patients:

1. Marked primary shock symptoms from which the patient never recovers, death ensuing in a short time after the injury.
2. Marked primary shock symptoms which pass imperceptibly into those of internal hemorrhage, either terminating fatally within a few minutes to hours, or continuing and giving rise to local signs of injury.
3. Marked primary shock symptoms, which gradually clear without any local sign of injury having developed.
4. Cases in which there are practically no signs of shock or only very slight at first, but in which local signs of peritonitis or of injury to one of the solid viscera appear, within a few hours, accompanied by general symptoms of internal hemorrhage. If in any case the primary shock symptoms have passed off and the patient's condition does not improve in spite of stimulants, etc., and especially if the local signs of injury to be mentioned below appear, there must be an injury to one of the viscera.

A thorough knowledge of the mechanism and pathology of abdominal injuries is absolutely necessary in order to interpret the symptoms. In addition to the above general symptoms of shock and internal hemorrhage there are certain valuable local signs. A convenient division of these is that first proposed by Eichel, into:

1. Those cases in which symptoms of injury of the alimentary canal predominate.
2. Those in which symptoms of injury of the genito-urinary system predominate.
3. Those in which the signs of internal hemorrhage predominate.

At the bedside one often meets with combinations of these, but the grouping is of considerable interest in studying the symptoms and attempting to make a diagnosis of the particular organ injured. An accurate history should be obtained in every case of the exact manner in which the injury occurred. It assists greatly in conjunction with the local symptoms in making a diagnosis. Only a small proportion of the cases show a superficial bruise, and one should not place too much stress on their presence, since the injury may be on the opposite side of the abdomen. The only exception is in the case of the intestinal injury, where the point of impact, as indicated by a superficial mark, often corresponds to the seat of injury. Makins found this to be true in nine cases.

The symptoms of injury to the alimentary canal are:

1. Pain, frequently well localized, more often diffuse. Constant and very severe, as a rule.
2. Tenderness, localized, corresponding to the seat of injury.
3. Vomiting, if from injury to stomach is bloody, if due to small intestine is frequently bilious. If so and present early, it is of great value in diagnosis of an injury.
4. Rigidity of the abdominal wall. According to some, pathognomonic of injury (Trendelenburg). According to Thomen, present in only 6 out of 20 cases. Of some confirmatory, but not to be regarded as of pathognomonic value.
5. Pulse usually above 100. Temperature of little value.
6. A fixed area of dulness. If it accompanies above signs, it is of value.
7. Symptoms of peritonitis appear within a few hours in cases of intestinal, but later in stomach perforation.
8. History of violent blow on front of abdomen, especially if applied over small area, less frequently one of crushing injury.
9. General symptoms of shock vary greatly.

The symptoms of injury of the genito-urinary system are:

1. Pain, as a rule in lumbar region, if injury to kidney or ureter. Of a boring character. Radiates down along ureter into testicle. If an injury to bladder pain referred to lower part of abdomen.
2. Tenderness over kidney (lumbar) region on pressure or over bladder.
3. Deep-seated hemorrhage in subcutaneous tissue around kidney.
4. Hematuria. May denote only simple contusion or grave injury. Latter if it persists. If the injury to the kidney has resulted in a tear of the ureter or a tear of the peritoneum there will be no hematuria, only symptoms of internal hemorrhage. Such may rapidly lead to death. In bladder injuries only slight amount of blood in urine, but have constantly a desire to urinate without being able to do so.
5. In renal or ureter injuries, sooner or later, formation of a tumor. Present in 12 out of 26 cases (Morris).
6. Oliguria or even complete reflex anuria.
7. Later symptoms. Perinephritic suppuration, hydronephrosis or pyonephrosis, chronic nephritis.
8. Evidences of displacement of kidney.
9. In bladder injuries, if intraperitoneal, within one or two days symptoms of peritonitis. In extraperitoneal tears evidences of dulness above the pubes fixed or bulging toward rectum at base of the bladder. Later, signs of pus around bladder.
10. Catheter can be introduced easily in rupture of kidney and get considerable blood. In rupture of bladder can pass catheter easily, but obtain only small amount of blood. In rupture of urethra can not catheterize; blood passes spontaneously. Injection test for rupture of bladder of little value.
11. Much shock in kidney injuries, as a rule, but little in bladder.

12. History of fall or blow on loins in kidney, or a kick over the pubes or crushing injury across pelvis in bladder, injuries.

Cases in which symptoms of internal hemorrhage predominate will be found more or less characteristic of ruptures of the liver or spleen or of the intraperitoneal ruptures of the kidney (see above).

1. Pain over the splenic region and localized tenderness in injuries of the spleen; same over the right hypochondriac region radiating to the shoulder in those of the liver.
2. Evidences of dulness in flanks, changing with position and over the lower part of the abdomen.
3. Symptoms of shock mixed with those of anemia.
4. Frequent accompanying fractures of ribs.
5. Symptoms of peritoneal irritation (rigidity of abdominal wall).
6. Icterus, when present, is of great value.

Injuries of gall-bladder and pancreas have no characteristic symptoms. Escaped bile will occasionally cause peritonitis. Injuries of pancreas cause shock and localized pain over epigastrium. Late results are formation of cysts.

The following cases will serve to illustrate the above three groups. For permission to publish those which did not occur in my own practice I am indebted to my colleagues, Drs. Halstead, Van Hook and Leeming of the Cook County Hospital.

Alimentary Canal.—(Dr. Halstead's case.) Boy of 14, while riding bicycle ran into tree, handle striking him in abdomen. Seen 6 hours later, vomiting, tympanites, rapid pulse, tenderness diffuse, especially over right side. Laparotomy. Sutured perforated colon ascendens. Recovery.

Genito-Urinary System.—Fracture of spine and rupture of kidney. (Dr. Van Hook's case.) While stooping, weight of elevator cage came down on back. Unconscious for ten minutes. Unable to use legs. Entered with great pain in back and abdomen. Rounded tender mass in left lumbar region. Urine contains much blood. Nephrotomy (Dr. Halstead.) Laceration of lower half of kidney (left). Tamponed. Recovery.

Intraperitoneal Rupture of Kidney.—(Dr. Halstead's case.) Male of 27 run over by wagon. Severe pain in right umbilical region. No hematuria. No vomiting. No external signs of injury. Immediate laparotomy on account of symptoms of internal hemorrhage. Much free blood in peritoneal cavity. Lumbar incision showed large hematoma around right kidney and rupture of same. All clots removed. Tamponed. Recovery.

Extra-Peritoneal Rupture of Bladder.—(Author's case.) Boy of 5 run over by car passing across pelvis. Seen 26 hours after injury. Dulness from umbilicus to anterior superior spine of ilium on each side; can not catheterize. Injection test deceives. Few drops of bloody urine. Suprapubic incision. Bladder wound sutured. Pelvic drain around bladder of gauze. Traumatic rupture of urethra treated by perineal section. Fracture of pubes. Recovery.

Rupture of Spleen.—(Illustrating group in which internal hemorrhage symptoms predominate. Author's case.) Boy of 16 had monkey-wrench thrown at splenic region. Signs of primary shock lasted ten minutes, followed by those of increasing anemia and peritoneal irritation. Tympanites, no vomiting. Anemic, pulse rapid and soft. Dulness in flanks and lower half of abdomen changing with change of position. Abdomen uniformly rigid and tender, especially left of umbilicus. Laparotomy ten hours after injury. Large amount of intraperitoneal hemorrhage, clotted and fluid. Rupture of spleen near lower pole. Splenectomy. Death on third day of anemia and septic peritonitis. At time of operation also found tear of omentum.

Rupture of Liver.—(Dr. Leeming.) Man caught between wall and wagon, crushing body across the abdomen, causing pain in epigastrium, tenderness, rigid abdominal walls and some tympany. Restless and anemic. Laparotomy on fourth day. Much bloody fluid free in peritoneal cavity. Large tear in liver. Tear sutured. Diet two days later.

The above cases illustrate all of the different modes of injury except a fall which produced rupture of the abdominal viscera without external signs. They also show the necessity of early diagnosis and prompt operative treatment.

(The conclusion of Dr. Eisendrath's paper next week will be followed by Dr. Coffey's paper and the discussion on both.)

PRINCIPLES CONTROLLING OPERATIVE INTERFERENCE IN HETEROPHORIA.*

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Nothing is more gratifying and satisfactory to the student than to group together certain phenomena of constant occurrence and, by the synthetic method, make a generalization that will be applicable to all cases that present these phenomena. A generalization is a very comfortable instrument of thought, and like mechanical devices it is a saver of time and of a multitude of pains. But the task that has been allotted to me deals with conditions so complex, and is fraught with so many difficulties, that to lay down any set of principles that will govern, without many exceptions in the multitude of varieties under which these interesting anomalies present themselves, is next to impossible. No generalization that I know of fits the condition. We are, therefore, constrained to apply such knowledge as we have gathered by personal observation and experience to the particular case under consideration. As corroborating testimony to this statement may be adduced the widely different views set forth in the numerous contributions to the literature on this subject, which have been published in the last ten or twelve years. Who, after reading these articles, is not possessed with a feeling of despondency akin to that of Tantalus in his discouraging labors? The only conclusion to be drawn is either that all roads lead to Rome, or that some of us have mistaken the city. From those who find in tenotomy the only cure for heterophoria, to those who claim that any surgical interference is bad, there is a broad field where many shades of opinion grow and flourish.

In view of this diversity of honest opinion and considering the difficulty inherent in the subject, it would be an act of temerity on my part to attempt to lay down any set rules or principles governing the operative treatment of heterophoria. I will, therefore, limit myself to setting down those principles that have guided me in treatment of these anomalies and on which the experience of the last twelve years has made but slight modifications. I might as well state at the onset that my rule is never to operate until all non-surgical procedures have failed. If it is deemed that considering the title of this paper I dwell at unnecessary length on the non-operative methods of treatment, be it remembered that upon a distinct and definite recognition and appreciation of existing conditions on the one side, and of the effects of the non-operative treatment on the other, depend the conclusions upon which are based the principles that govern in the operative interference.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

THE PATIENT'S HISTORY.

Careful inquiry into the patient's antecedents, history and habits and general condition should be the starting point of the examination. Neurotic antecedents should be carefully noted and hysterical tendencies, if existent, should be carefully recorded. The condition of other organs should receive attention, whether the patient has been afflicted recently with exhausting diseases or with diseases liable to affect the ocular innervation. Nervous prostration is an important factor, and the effects of la grippe on the eye muscles, especially the interni, has impressed me very strongly. Acquired exophoria I have frequently seen concomitant with and persisting after an attack of grippe. That the anomaly was caused by the disease I have been able to demonstrate in a number of instances in which the eyes had been examined for other ocular disturbances, and the muscular balance recorded as normal. The manner in which the eyes are used, both as to time and light, habitual position of books or work, should be ascertained. The conjunctiva should be carefully inspected, to eliminate conjunctival asthenopia. The ophthalmoscope should reveal any intra-ocular disturbances.

EXCLUSION OF ERRORS OF REFRACTION.

The examination for errors of refraction should be exhaustive, and the test glasses should be the method exclusively relied on. In all cases the muscular balance should be tested previous to correction, both for distance and in accommodation. If heterophoria is detected, the muscular power should be tested at the same time. In simple lateral deviations, especially where distant and near points are not in harmony, the laws governing the relative range of accommodation and convergence should be carefully considered. Examination under full mydriasis should be made in all cases under 45. Atropin to be used up to 35, and homatropin to 45. If ametropia or anisometropia exist, full correction should be ordered and used for a period of at least three or four weeks, during which period the balance and muscular power should be repeatedly tested. This period is of the utmost importance, for the results obtained are the data that determine the future management of the case. Without it no accurate knowledge can be obtained regarding the tendencies of the muscles under the altered conditions, and any operative interference where these changes are not taken into account is, to put it mildly, injudicious. It is more than probable that quite a percentage of the unsatisfactory results of operation are due to a mistaken zeal for operating before the correction of the ametropia has had a chance to manifest its results.

Close observation during this period will also enable us to determine whether the defect is due to muscular predominance or to weakness of the antagonist. By this is meant that it does not necessarily follow that an eye is deviated toward the preponderant muscle. As illustration, take a case with adduction 20 and abduction equal to 8, the externi are normal, the interni weak. Yet in this case there was esophoria of 2° for distance and exophoria of 5° for near. (No hyperphoria could be detected.) Close attention to these details will not only reveal some most interesting anomalies, but will indicate the way to relieve the distressing symptoms frequently associated with them. This period will also frequently reveal the fact that the asthenopic symptoms were not caused by the heterophoria, and that the readjustment of convergence and accommodation under proper ametropia correction is all sufficient. Where the symptoms are due to heterophoria and improvement is noted, the prism exercises and electric treatment should be pushed without hesitation. A cure will be secured in the vast majority of cases by this method. But a minority remains; it must be considered, and cured if possible. Operation is usually effectual, and when properly performed is free from the dangers frequently imputed to it.

Hyperphoria is not only the most fruitful source of asthenopia, but a decided disturber of lateral balance; it is further distinguished by being the most difficult form of heterophoria to reach by orthoptic exercises. When it is due, as it is in many instances, to ametropia, proper correction may promptly do away with the symptoms and eventually with the defect. Considerable relief is experienced by correcting prisms, in some instances, but where the degree is more than 2° or 3°, and not marked enough to interfere with binocular vision, and have the patient suppress the image of one eye, I have found that a carefully performed graduated tenotomy will, as a rule, cure the defect. One whose valuable contributions to the literature on this subject I have always read with much interest and profit, in criticising the *operative* treatment of heterophoria, reported a case illustrating the dire effects of tenotomy for hyperphoria—a case of overeffect of 9°—a flat failure where the last condition of the man was worse than the first. But is it fair to judge of an operative procedure by such a gross overcorrection? No valuable conclusions can be drawn from the recital of one case, but as illustration of the beneficial effects of a tenotomy, and as a companion piece for the above picture referred to, I will report one from my rather scanty list of graduated tenotomies:

Case I.—H. S., aged 19, was brought to me in the spring of 1892. He gave the following interesting history: Student in Yale; always enjoyed good health; family history negative; no bad habits, training then for tennis; contracted measles, which ran a regular course, but left him very debilitated and with a persistent cough; consulted New York physician, who advised him to go south and rest; improved; returned to college, but found that he could not use his eyes and began to suffer with severe pains in his legs and extreme exhaustion on the slightest exertion. A neurologist, after careful examination, informed him that there was nothing organically wrong, and advised him to give up his college course and return to his home. He consulted Dr. McClelland, U. S. A., who referred him to me. He had been doing nothing for four months when I saw him. He complained of severe headache if he attempted to use his eyes, in addition to the pains in his legs, and the terrible feeling of exhaustion. The ophthalmoscope revealed nothing abnormal. Examination under full mydriasis revealed: Anisometropia R. H. 0.50, L. E. Hast. .050 ax. 105. V. 20/20=R. Hyp. 3. Abd. & Add. normal. Prescribed full correction of anisometropia for constant use: no relief; orthoptic exercises and electrical treatment daily: no improvement. In three weeks the hyperphoria has increased to 4 degrees. I gave partially correcting prisms with slight relief, but after three weeks there was no further improvement. Melancholia set in and it was impossible to rouse his interest in anything. July 28 I performed graduated tenotomy of R. superior rectus to Hyp. 1 degree. In one week all the symptoms had entirely disappeared, and September 2 he reported that he had continued perfectly well. R. Hyp. 1 degree. He returned to college, graduated and is now engaged in active business, with no return of the trouble.

Esophoria is, in my experience, one of the most trying and perplexing forms of heterophoria. When the degree of deviation is small it is usually not productive of any particular discomfort. When induced by hypermetropia ready relief is afforded by full correction. When the esophoria is symptom-producing in spite of total correction of ametropia, the problem becomes complicated and particularly so when the abduction power is normal. The relative range of accommodation and convergence plays in these cases a most important rôle, and he who at the near point can not disassociate sufficiently his accommodation from his convergence, whose negative range of accommodation is too short, is in trouble. Overcorrection of hypermetropia in young patients has not yielded very good results in my hands. Prism gymnastics, to be done always at the 20-foot distance, will increase the abducting power, and if the interni are not standard they should come in for a share of the exercise. If in simple uncomplicated esophoria these methods should not give relief, graduated tenotomy is indicated. When there is slight esophoria for distance and exophoria in accommodation, and there is no hyperphoria, the case should be treated as a case of exophoria. In advising an operation for esophoria the patient should be warned that the trouble may recur.

By the term exophoria is meant a divergence of the visual lines, both for distance and for the near point, usually accompanied by a preponderance of the externi over the interni. It is in our artificial city life, where most of the daily work is at the near point, one of the most common of the muscle anomalies, and it is unquestionably an acquired difficulty in many instances. I refer to cases of uncomplicated exophoria. The term insufficiency of the interni seems to have fallen into disuse in the last few years, but I know of no other that better fits many of the cases that we are called on to treat. Those cases in which for distance there is either orthophoria or slight esophoria, and for the near point exophoria exists, no hyperphoria to complicate the tendencies, are simply cases of internal insufficiency. I do not agree with those that hold that orthophoria for distance is a disease. I have taken particular pains to test my orthophoric patients for their near point, and seldom exophoria was detected. This form of heterophoria is the most amenable to prism exercises, and it is seldom that an uncomplicated case does not yield to these methods. But occasionally we encounter cases, especially where there is a marked preponderance of the externi that will not yield to non-operative methods. Operative interference is then indicated and usually gives excellent results. No form of heterophoria requires more patient attention to details, and operative interference should be resorted to only after most careful and persistent attention to the muscle powers. Experience teaches that many cases in which a marked exophoria exists for distance, 4″ or more increased for the near point to perhaps twice the amount are cured by persistent adduction exercises with strong prisms. A certain percentage, however, is not cured by this method, and is cured by operation. What the particular characteristic or element is that renders one case amenable to treatment and another not (I am speaking of uncomplicated cases of true exophoria) eludes me; but the bizarre contradictions of muscle imbalance are ever a prolific source of surprises and disappointments, and I imagine always will be. The following is a case in point:

Case 2.—Miss B. W., aged 23, was brought to me in November, 1890, for the relief of intense headaches, which made their appearance two years previously. She had never been able to use her eyes with comfort for close work, but for the past year not only is she unable to read and sew, but vision at a distance, theater, lectures, etc., brings on the most excruciating pain. The patient is a well-nourished, apparently strong young woman, but the constant pain in her head and back oblige her to sit most of the time with her eyes closed and her head rested in her hand. There is a history of nervous prostration and also history of having her field of vision become narrowed to a point and then vision was lost for a moment, to return anon to a normal condition; no other history of hysteria; father and mother are strong and healthy.

The eyes present nothing abnormal externally or by ophthalmoscopic examination. V.=20/20, with .025 ax. 180 for each eye. Sees better. Hy. O. Ex 2/4 Abd. 7, Add. 18. Under atropin R. & L. +.050+.025, 180, 20/20. I prescribed these glasses, gave iron, quinin and strychnin and began exercises with prisms and electric treatment. I informed the parents that I felt confident that this treatment would bring about the desired result, but if it did not, an operation might be indicated. Parents stated that under no circumstances would they consent to an operation. Feb. 18, 1891, Ex. 4, Abd. 10, Add. 25. (The exercises were done with prisms, base out. I could not get beyond 25 degrees.) The pain continues, electric treatment gives temporary relief, and 1 degree, base in, made reading somwhat more comfortable. March 10, pain continues, Ex. O, 5, Abd. 10 degrees, Add. 25. At the patient's request, on April 8, I made a graduated tenotomy of the R. Ex. Rectus, and reduced the Ex. to 2 degrees. In five days Ex. O. 1, Add, 45, Abd. Headaches have entirely ceased. Ten days afterward she claimed to be entirely recovered and has remained perfectly well up to date.

COMPLICATIONS.

In the consideration of the three muscular anomalies hitherto discussed, I have purposely avoided mentioning the mixed forms. When hyperphoria of any considerable degree complicates either esophoria or exophoria, the question assumes an entirely different phase, and the greatest care is required to determine the actual cause of the asthenopic symptoms. Unless the lateral heterophoria is very pronounced and the muscle power very much out of balance, either through preponderance on one side or weakness on the other, the vertical imbalance should be suspected as the cause of the lateral defect, and the efforts for correction should be directed mainly to this point; not so exclusively, however, as to lose sight of the other anomaly, but bearing in mind that relief from the hyperphoria may entirely do away with the lateral disturbance, and will at least very much simplify the proposition. The same principles should govern in these cases. If operation is deemed necessary, it should be made for the relief of the hyperphoria. The remaining lateral imbalance should then be treated as simple exophoria or esophoria.

THE GRADUATED TENOTOMY.

The operation that I have found best suited for the different forms of heterophoria is the graduated tenotomy, described by Dr. George Stevens, and the instruments best adapted for its accomplishment are those devised by him. The operation should be performed with full antiseptic precautions and under local anesthesia (cocain). I have never attempted a graduated tenotomy under general anesthesia. I operate in my office so that I am able to control the effect by subjective tests. The technic of the operation differs in no way from that described by the different writers on this subject. With the speculum in place, holding the lids well apart, the patient looking in the direction opposite to that of the muscle to be cut, the conjunctiva and the capsule are seized with the forceps, and a small opening made, exposing the insertion of the tendon in its central part, the tendon is grasped with the forceps, and its insertion to the sclerotic severed at the central portion. From this point the tendon is severed equally in both directions. The patient is then to sit up, the Maddox rod is placed before the operated eye, and a test made to ascertain what effect has been produced. With this test as a guide, the operation is continued until in the judgment of the operator another test should be made. If the result is satisfactory, the speculum is removed, the eye irrigated with a saturated solution of boracic acid and a light bandage applied.

Contrary to what I gather is the accepted rule; I never aim to overstep parallelism, but rather stop short of it about one degree and trust to subsequent stretching by prism exercises to bring about the desired result. In lateral deviations one-half of the total amount is sufficient, leaving the residue for a future operation on the other eye. The advice given in one of the most popular text-books, to perform a full tenotomy, and if excessive effect is produced, to bring forward the tendon with sutures, I consider dangerous. The very small conjunctival opening recommended by some operators, in my opinion, does not only lack advantages, but complicates the operation by not allowing free drainage for the blood, which accumulates under the conjunctiva, and by enlarging that portion of the eye is apt to change its position somewhat, and thus render it difficult to accurately estimate the effect of the operation. The patient should be seen the day following the operation and subjective test made. If more effect is desirable gentle stretching by the use of prisms is to be done. No bandaging is necessary after the first day, except in the open air.

But there is still a remnant, not a very large one, fortunately. But we hear from it more than the other ninety and nine. Who has not met with these trials in his experience and been driven to the verge of despair? Glasses, prisms, electricity operations, all fail to make those eyes agree to work together in peace and harmony. Woe unto the man who starts on an operation expedition with them. The bourne will never be reached, for in the words of one who was a poet and not an oculist:

> I've seen them crossed at every angle,
> Acute, obtuse and right.
> I've seen them lose in a hopeless tangle
> Their kinky lines of sight.
> But the genuine spiral cross has never
> Before been submitted to me,
> I've heard of it, read of it, dreamed of it ever,
> And now, ye gods, I see.

SUMMARY.

Study your patient thoroughly. Eliminate all extraneous causes. Correct ametropia and anisometropia. It may be all that is required. If not, strengthen the weaker muscle. Give these methods a fair trial. If in doubt, *do not operate*. If you decide to operate, use your scissors with care and with brains.

34 Washington Street.

THE PRINCIPLES CONTROLLING THE NON-OPERATIVE INTERFERENCE IN HETEROPHORIA.*

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The question involved in the principles controlling the non-operative interference in heterophoria is so complex and comprehensive that it would naturally be the subject for many papers, and an attempt to cover it all would be a disappointment and an impossibility in the limited time allowed. I need not tell this audience of the innumerable possibilities which may occur in a pair of eyes with their extrinsic and intrinsic muscles out of gear, of the influence of age, temperament, health, mental and physical development, of the influences of domestic and business environment, and of the often vicious effects of school life, of the inexorable law of heredity or of the inherent weakness of the ocular muscles, of the numerous and complicated anomalies of refraction, of the influence of bad light and too much light, of the influence of the various trades and occupations—I need not tell you of these things, nor of many other considerations which naturally come to mind in considering this broad subject. In fact, heterophoria covers everything we are fighting to smooth down, abate and correct by general and local treatment and by mechanical appliances and operative measures.

In considering the subject of heterophoria we can not ignore the aggravating inconsistencies of comfortable ametropic eyes as well as of uncomfortable ametropic eyes. Consider for a moment the fact that the majority of all persons have some ametropia, and yet they go through life without knowing it or suffering from asthenopia. Persons with muscular anomalies are also quite as common, esophoria, exophoria, hyperphoria, and yet they work and read and write unconscious of their defects. Hyperopia often exists but is not known until presbyopia comes on, and yet during youth and school life and adult life no complaint was made of the eyes. On the other hand, how slight are the anomalies of refraction which cause great discomfort. Hyperphoria of two or three degrees interferes with comfortable use of the eyes. Hyperopia of even 0.25 is a source of trouble. Slight disturbances of muscular balance cause distress and interfere with school and mechanical work. Why do these inconsistencies exist? Are the eyes and their muscles responsible for all this distress, or is there something behind them in the make-up of the individual? To this we may say yes and no. We all see cases of low degrees of hyperopia in nervous children where the discomfort disappears after wearing glasses a while. The hyperopia still exists, but the need for them has passed. A change has come about in the child which enables him to dispense with the artificial aids. I tell parents that in some cases glasses are like crutches to the lame, only to be worn while the necessity exists.

What is this something—this factor which causes slight muscular and optical errors to assume such importance? In the study of this factor will we find the underlying, dominating influence which will guide us in the successful treatment of these ever-present cases. It seems quite clear that there is a reciprocal influence of the eyes on the system and the system on the eyes. Both sides of this problem have to be studied. In many of the optical and muscular errors it can be plainly demonstrated that the eyes both directly and indirectly affect the general health. Nausea, anorexia, headache, indigestion, malaise and even mild cases of chorea are promptly relieved by properly adjusted lenses. On the other hand, anemia, impoverished blood, weak digestion and poor assimilation, neurasthenia, hysteria, uterine disturbances and many forms of disease undoubtedly affect the eyes. In studying the principles which will guide us in the treatment of these cases we will find that it requires sometimes a simple and sometimes a composite treatment. It may be mechanical, therapeutic, surgical or hygienic. One or more of these methods may be necessary to guide the case safely over the rough waters which seem to surround many of them. We must necessarily study the case from various standpoints and appropriate such remedies or treatment as may be b[illegible] suited to the special c[illegible] under [illegible]sideratio[illegible]

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The task assigned me is so broad I will, with your permission, pass over the hyperphorias and consider briefly esophoria and exophoria, with special reference to the latter. The conditions we have most frequently to contend with are esophoria and exophoria. Let us for a moment contrast the two. In the higher degrees of esophoria there is a vicious contest for supremacy on the part of the interni. It is the ins against the outs; it is brother against brother. When they should pull together in harmony the interni persistently do all they can to discommode the externi and bring discomfort on the unfortunate owner of the contending eyes. They carry on this contest year after year until the proper lenses are adjusted. In esophoria there is a natural tendency in the eyes, when the ametropia is corrected, to return to a normal muscular balance. When the strain on the accommodation and convergence is relieved the eyes are generally comfortable. Even in esotropia under correcting lenses the interni in time forget their vicious habit of converging and give up the fight and allow the eyes to assume a normal parallelism. Long years ago have we ceased to operate early on cases of squint, and why? It is because we have learned that it is sometimes corrected spontaneously without glasses, and even very high degrees of strabismus can be corrected with the aid of glasses if the parents of the child are willing to allow time enough. It takes years to do this, but the final result is far better than surgery could have accomplished. In exophoria the conditions are quite in contrast. The interni, weak and irresponsive, allow the eyes to diverge. Only under stimulation do they bring the eyes parallel, and then only to relax at once when the nervous stimulus ceases. In severe cases there is inability to produce binocular vision except under great muscular effort. This is not agreeable and hence the eyes naturally seek a position of rest, which is that of divergence. The correction of the ametropia steadies the eyes and aids very much in restoration of normal muscular balance. In the higher degrees, however, something more is necessary; we must resort to measures to stimulate the interni. The first and most important measure for relief is the correction of the ametropia. This should be done under the influence of a cycloplegiac, the muscle strength should be carefully measured and suitable lenses, combined or not with prisms, prescribed.

I have just said that the correction of the ametropia is the most important measure for the relief of the asthenopia. Of equal importance is the consideration of the physical condition of the patient. Especially is this the case with regard to boys nearing the age of puberty and girls approaching the menstrual period, when headaches, anorexia, nausea and other symptoms prevent them from performing their often too exacting duties at school. The physical discomfort is out of all proportion to the optical or muscular error, and yet the suffering is none the less real. I recall a typical case which I treated several years ago, of a girl of 13, with moderate astigmatism and esophoria, who suffered severely from asthenopia and was quite incapacitated for school work. The menstrual function was not yet established, and she was suffering from the constitutional disturbances incident to that period. Her father, who was a warm professional friend of mine, was anxious about her delicate condition. I assured him she would recover and advised him to keep her out of school, to absolutely rest her eyes, to let her ride horseback, play athletic games and live out of doors as much as possible. The recovery came in a few months and was complete, but it was not the correction of the astigmatism alone that cured her. Rest for the eyes is often quite as important as the adjustment of the lenses. The latter alone will not accomplish the desired end. The eye muscles, intrinsic and extrinsic, require rest and time to recuperate.

A year ago Dr. Gould told this section that "no finer problem or more complex one exists in medicine than this of prescribing glasses in exophoria." The condition is one which requires constant care and more personal attention than other anomalies. With esophoria corrected and the relations between convergence and accommodation adjusted, the ceaseless motions of the eyes during working hours do the rest. Esophoria becomes orthophoria.

While it is true that slight degrees of exophoria do the same under the steadying influence of correcting lenses, yet in the higher degrees something more must be done. The lax interni must be stimulated by the use of prisms, and this must be kept up until there is a restoration of the normal balance in the muscles. It has been my practice in these cases to order weak prisms, 1 or 2 degrees, bases out, for constant use. If astigmatism or hyperopia exist they are corrected and combined with the prisms. In addition to this, prism exercise is begun and carried out daily, the seances lasting about five minutes three or four times a day. For this purpose prisms of 10 or 15 degrees are ordered. I direct the patient to look at a candle which is placed on a table or bracket so that the flame is about on a level with the eyes or slightly below. Then the patient approaches the candle until he can see singly through the prisms. He then walks backward until he sees double; then comes forward until he has single vision, and then again walks backward. Then I instruct him to look to the right or left and back to the candle. If he sees double he again approaches the candle and then retreats. In this way power to fuse the images at a longer distance is gained. Having the candle fixed and the patient free to move at will is much preferable to the gradual withdrawing of the candle while he sits or stands. I can better illustrate what I am to say by a typical case. Two years ago I began treating a pale-faced, delicate boy of 13, whose general appearance showed him to be badly nourished. He had severe headaches and could not read even five minutes. He had diplopia for the distance, but it was not so annoying for the near. Vision perfect in each eye with + cyl. 0.5. He had ex. 11 degrees with adduction of only 4 degrees. He was ordered + cyls. 0.5 ⊃ prisms 1 degree, bases out for constant use and prisms 15 degrees in frames for exercise. In a short time the diplopia disappeared, his general health improved from his out-door life, and in less than a year he had practically orthophoria for near, and for the past year has studied without interruption from his eyes. The improvement of his health, the constant use of the prisms and daily prism exercise brought about the desired end.

In contrast with this case, a healthy, well-developed boy of 12 has had annoying asthenopia for two years. R. E. Em. L. H., 0.75 V. = 1. There is Ex. 18 degrees, add. 6 degrees. He was ordered prisms 1 degree, bases out, for constant use; and 15 degree prisms for exercise. Six months later he had add. 20 degrees, and the asthenopic symptoms were practically gone. He still continued the use of the prisms for exercise, but dispensed with them for constant use. For a year past he has had no trouble in studying.

Let us take one more advanced in years. Mrs. P., 33, had exophoria 10, add. 8, abd. 12, with H. 0.5

each eye, V. = 1. When first seen in 1893 she was wearing a pair of prisms 2 degrees, bases in, prescribed for her a few months before. They gave her no relief, in fact, made her worse. I then reversed the prisms, placing them bases out. Her condition began to improve, and two years later she had orthophoria. Here was a case for surgical interference, but excellent results followed the use of the prisms. Since then her presbyopia has been corrected from time to time, but she has comfortable eyes. It was exophoria of nervous origin.

Miss ——, 35, suffering for months past with asthenopic symptoms, headaches and neurasthenia. There is Ex. 20, add. 5. Has diplopia for near and distance. Reads with one eye at a time by holding the other one closed. Refraction is M. 3, 5 ⊃ — cyl. 0.5 R. and L. with perfect vision. It was a tempting case to operate on, but this measure was declined. Prism exercise was begun and persisted in faithfully at home and at my office. In less than a year orthophoria was restored and the asthenopic symptoms disappeared and have not returned since, now about seven years ago. This might properly be called a case of hysterical exophoria. Had a tenotomy or an advancement been made when the symptoms were at their worst, we can only surmise what her condition would be now that her muscles have regained their normal balance.

I have a delicate girl of 14 under my care who has an enormous exotropia. I can not measure the divergence, nor can I produce diplopia, so great is the inco-ordination of the eyes. Yet the vision of each eye is perfect with + cyl. 0.5. At first she could only converge for a few seconds, now she has gained considerable power. She ought to quit school, but she begs to stay for fear she will drop behind her class. She should live on a farm and do the work of a country girl and leave her books in the city. A year or two there would improve her physically and mentally. Is this a case for operation? I think not. Time and physical development and the exercise of the interni will do much for her. It may take two or three years to cure her, but I think she will come out with comfortable working eyes. Later on, if this treatment is not successful, operative measures can be resorted to at any time.

In 1895 I had a patient, 33 years of age, a very busy man, filling a responsible position in a large manufacturing plant in the south. He was very neurotic and was worked down by long application. He had M. 6 D. in each eye with practically perfect vision. He was suffering from pain in the eyes and blepharospasm. There was Ex. 4 degrees with add. only 6. I tried the effect of prisms and recommended rest and an ocean voyage. Instead he went to a fashionable summer resort and, of course, came home without benefit. He returned to his position and tried to work. In the following year I saw him again and his condition was unchanged. He was nervous, uneasy and restless, and his exophoria was in the same condition. I again recommended absolute rest of the eyes and an ocean voyage. He went to New York and took passage on a sailing vessel for San Francisco, doubled Cape Horn, spending 120 days on the ocean before reaching his destination. He then crossed the continent, called on me on his journey to the south, and reported himself well. It is now six years since he made this trip and he is still at work. This is not a prescription to be given or taken every day, but it did the work, and did it well.

Other cases illustrating other phases of exophoria could be presented but time forbids. In brief, exophoria is manifest in children in feeble and vigorous health and in persons of maturer years. It occurs in persons with myopia and hyperopia and astigmatism. Numerous cases could be recited showing the value of prism exercise in exophoria. It is one of the important factors in restoration of normal muscular balance. I am quite convinced of the value of the constant use of weak prisms, bases out, in these cases. While the prisms do much they can not be relied on for all. The condition of health should be carefully considered, as this is often the foundation of all improvement. Rest from school life should be insisted on in many cases. We give exophorics much time to recover in, often years, before operating. Exophorics are entitled to equal considerations if we can by delay bring about as brilliant and satisfactory results by so doing. Esophoria is active, exophoria is passive; the one requires relaxation, the other stimulation. In esophoria convergence and accommodation act together in excess. In exophoria accommodation and convergence are separated by a hiatus which is supplied by a nervous impulse. It is not the eye muscles alone we have to consider, but the innervation behind them.

(The discussion on the papers of Drs. Gardiner, Ayres, Jackson and Gould will follow the papers of the latter two next week.)

APPENDICITIS FROM A PHYSICIAN'S STANDPOINT.*

JAMES TYSON, M.D.

PHILADELPHIA.

Eleven years have elapsed since the first operation for appendicitis was done for me by an eminent surgeon of Philadelphia. The patient was a lad eleven years of age, who had had at least two previous attacks, and the operation may be said to have been done after recovery from the second attack. It was successful and the boy recovered without a bad symptom. Since then I have lost no opportunity to study the disease from a physician's standpoint and sought to gather some information whose application might save some of the lives which are still unfortunately lost by this disease. In the course of my observation I have noted the following: First, that there occur a certain number of cases so evident and decided that no one questions the propriety of operation. These cases are all characterized by the cardinal symptoms of sudden and severe pain, great tenderness in McBurney's point, the rigidity of the rectus muscle, with or without tumor, with moderate fever and frequent pulse—these symptoms being permanent and uninterrupted until relieved by operation. Second, cases in which the symptoms remain permanent, although with diminished severity, subject to exacerbation, to which the term chronic appendicitis may be applied. Third, cases in which the symptoms abate and disappear, to remain altogether absent in a few cases, but recurring in many often with growing severity until permanently relieved by operation or the victim is carried off by a final fatal attack.

INDICATIONS FOR OPERATION.

The first category of cases requires no further reference, as the propriety of operation is conceded by all. The second category, that of chronic appendicitis with exacerbations, about which there is usually no uncertainty as to diagnosis, should give rise to no doubt as to treatment, although I regret to say there are still a few physicians who prefer to jeopardize the lives of their patients by deferring operations which should be done without delay. I do not think it necessary to consume time in giving reasons for this view further than that I have personal knowledge of a sufficient number of cases to justify this conclusion.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

On the third category, however, I propose to dwell a little longer. I allude to those cases in which a seeming attack of appendicitis is followed by apparent recovery. At the outset I announced the proposition that in all cases in which the actual and undoubted existence of an appendicitis can be shown, laparotomy should be done and the appendix removed, if the services of a competent surgeon can be secured. In making this announcement I shall probably surprise some of my medical friends, even a few surgeons. But I beg you will note again what I have said—the appendix should be removed in all cases in which the undoubted presence of an appendicitis is established and the services of a competent surgeon can be secured. I emphasize this statement because I believe, first, that the diagnosis of supposed appendicitis wherein operation has found a normal appendix has not been usually well founded, and, second, that a certain amount of reproach has been brought on the operation by incompetent surgeons whose inexperience has led to diagnosis which was thus unfounded and whose technic has been for the same reason defective.

THE NEED OF ACCURATE DIAGNOSIS.

The diagnosis of appendicitis is not always easy. On the other hand, in my experience, it is often very difficult. I will not take up the time of the Section at this hour in pointing out the conditions of a general or differential diagnosis, other than to say that unless such diagnosis is plain to both physician and surgeon, operation should not be done. Not every case of pain and tenderness in the region of McBurney's point is an appendicitis, and, as I have said, it is the operation based on an imperfect diagnosis which finds a normal appendix, which causes men to say, on the one hand, that operation was unnecessary; on the other, that cases of appendicitis get well without operation. I do not deny that appendicitis may get well without operation, but I do say that if the instances to which I have referred are eliminated, the number of recoveries without operation will be greatly reduced, and in some respects the unfortunate event of finding a normal appendix will be much more infrequent. It is true that such an experience is more or less humiliating, and we can hardly blame the conservative physician who has not met many cases of appendicitis for saying: "I do not believe in the operation for appendicitis when the operator finds a normal appendix."

On the other hand, while I admit the possibility of spontaneous recovery from appendicitis, I believe that such cases are so infrequent that when taken in connection with the fact that every single attack of appendicitis predisposes to another and more serious one, and this second fact, that all the classic signs of an appendicitis may disappear and yet the appendicitis remain, I return to the proposition that the appendix in every case of well-founded diagnosis should be removed in order to insure the life of the patient.

AN ILLUSTRATIVE CASE.

In confirmation of this proposition I relate the following case: I was consulted by a lady of forty-six for recurring attacks of hepatic colic. That the painful attacks were due to impacted gallstone is evident, because there were not only the usual symptoms, but calculi had also been found in the stools on several occasions. On Saturday, February 22, Mrs. X. sent for me on account of one of her usual attacks of colic. Before I examined her, however, she said: "I have had a second pain, doctor, lower down." On examination I found an evident hard swelling in the right iliac region, exceedingly tender to touch, as well as actively painful. Appendicitis was at once suspected, but I was so surprised and knew, too, that the family would be so alarmed that I said nothing at the time. At a later visit the same day, however, I announced the fact, and then I learned that she had had at least two similar attacks, one in Paris and another in New York City. She was directed to remain in bed, to have ice continuously applied to the region of the appendix, and to take no food. I also arranged for a consultation with Dr. John B. Deaver for the next morning, but confess to an uncomfortable night, fearing I had put off the consultation too long. Fortunately, at our meeting we found the symptoms had abated, though still evident, and the diagnosis was confirmed. In view of the improvement the same treatment was continued. Each day found the symptoms growing less marked until the morning of Tuesday, March 4, which had been set for a final consultation, prior to operation, there seemed to me to be none remaining. There was no lump, no rigidity, no tenderness to any pressure which I could exert. The patient said that with the pressure made by Dr. Deaver she was just conscious of discomfort. The almost simultaneous remark by both of us on leaving the room was: "Well, this attack is over." The temptation to leave her alone was great. I recalled, however, the two previous attacks, and operation was decided on. It was done two days later, the removal of the appendix being preceded by that of the gall-bladder, which contained 101 gallstones. The appendix was about three inches long and half an inch or more in diameter, nearly cylindrical throughout. It was not adherent except by its normal attachments, but appeared distended. On being cut open it was found filled with white, creamy pus to the amount of at least a dram, probably two drams. The patient made a good recovery and from having been a more or less constant sufferer is enjoying health and life. Whatever doubt I may have had of the propriety of removing an appendix once diseased was removed by the narrow escape of this patient. At almost any time perforation might have occurred, succeeded by a fatal peritonitis.

Again, I was consulted only a few days ago by a young medical friend, who first felt pain in the right iliac region about a year ago. Since then he has been conscious of discomfort in that quarter more or less all the time. Two weeks before he saw me he had an exacerbation, again the day before he saw me and again on the same day. On the occasion of the attack two weeks ago he consulted a medical friend, who declared he had appendicitis, that he could feel the enlarged appendix, and urged immediate operation. When I examined him I could elicit evidence of tenderness at the edge of the rectus slightly above rather than at McBurney's point, but I found no other signs of appendicitis. I sent him to Dr. Deaver, who found a loose kidney at the position indicated, but no appendicitis, and decided that the case did not call for operation. With the hint thus obtained, I was myself able to locate the displaced organ. Thus was an unnecessary operation averted, and I believe many of the operations in which normal appendices are found are thus imperfectly based.

CONCLUSIONS.

It is such experiences as these which have brought me to the conclusion that every case of appendicitis whose diagnosis is thoroughly established should be operated on, always, if possible, in the interval between attacks. Of the diagnosis, however, we should be reasonably certain. In view of the occasional difficulties of diagnosis, it may happen now and then that a normal appendix is removed. But I have come to the conclusion, too, that it is better to have a few normal appendices removed than that one which ought to have come out should remain and cause the death of its owner. The appendix is not an organ of which we need be especially proud. It is useless and exceedingly vulnerable and without powers of resistance when attacked.

1506 Spruce Street.

DISCUSSION.

Dr. Charles G. Stockton, Buffalo—I can not refrain from saying a word on the subject. I wish to compliment Dr. Tyson on his courage in attempting to classify appendicitis and, perhaps, his classification is as good as can be made. It seems to me that the classifications usually given are altogether inadequate. I agree with Dr. Tyson in his statement that appendicitis should be operated on; I would like to go still further and say that it should be operated on immediately. I disprove of the delay of from twenty-four to forty-eight hours which some surgeons allow. For this delay physicians are often responsible. The danger lies in postponing the operation twenty-four hours. Either operate immediately or else do not operate till late in the interval, is a good rule.

Dr. H. H. Witherstine, Rochester, Minn.—I wish to congratulate the author of the paper for the position he has taken relative to appendicitis. To illustrate my ideas in reference to this disease I would like to relate two cases. A few months ago I saw a young lady who was suffering from intense pain in the region of the appendix and who had all the classical symptoms of appendicitis. I recommended an operation at once. When the abdomen was opened it was discovered that she would not have died in that attack; it was a catarrhal condition, not a suppurative one. A few days later I saw a young man who suffered in the same identical way. I also recommended an operation which was done thirty hours after the attack began. The appendix in this case was swollen and contained one or two drams of pus. These two cases were identical; yet the first patient probably would have recovered from that attack without an operation, while the second would surely have died. We have no light at present by which we can determine at the beginning of an attack which case will and which case will not suppurate. Therefore, it is my judgment that every case should be operated on within the first thirty-six hours. If the operation is done thus early practically all the patients will get well. Without rehearsing the differential diagnosis between appendicitis and the diseases for which it may be mistaken, I will say that with a careful examination the diagnosis in appendicitis ought to be reasonably certain. With my experience before me I am strongly impressed that the error of delay is a most serious one.

Dr. J. M. Anders, Philadelphia—The classification Dr. Tyson has given will serve as a working basis for the general practitioner. Every case in which the diagnosis is clear should be operated on at once. This is a lesson that we have been slow to learn and can not be too strongly emphasized. If there is the slightest doubt as to the diagnosis of appendicitis, and even if we think that we have made only a reasonably certain diagnosis of this affection, we should call to our aid a skilful surgeon. Without advising the family that an immediate operation is demanded we can, and in such instances should, send for a competent surgeon. No matter whether in his judgment an immediate operation should or should not be done you have divided the responsibility and not failed in your duty. If a competent surgeon is not available, in a large class of cases in which the operation is not performed immediately, or in which it can not for any reason be performed immediately, we should employ refined methods of diagnosis. My experience teaches me that when the local symptoms are comparatively mild and yet point to an attack of appendicitis, the blood examination will show a mild leucocytosis. I want to state at the outset that the degree of leucocytosis by no means gives a clear, definite idea of the nature and extent of the pathologic change; in a general way, however, it can be relied on as a guide if the accompanying symptoms are carefully considered. If repeated examinations of the blood be made at short intervals in cases in which suppuration is present there will be found a rapid rise in the leucocyte count; if gangrene occurs the count rises more rapidly still. A notable exception to this rule is met in cases of perforation with associated evidences of generalized peritonitis. In such an instance, however, the associated symptoms will almost always serve as a guide. On the other hand, I have frequently found that a mild leucocytosis may rapidly disappear at the end of a day or two and, after a free purgation, the count will return to the normal. I approve of an operation in cases of relapsing appendicitis. Finally, I hope that the internists, as well as progressive surgeons, will soon learn this lesson; that all cases as stated by Dr. Stockton in which the diagnosis is clear, should be operated on at once and thus decidedly diminish the mortality rate.

Dr. Tyson, in closing—In the matter of classification I made no attempt to classify any other except those cases which came under my personal observation and which fell into one or the other of the three divisions. It is simply a working classification and most cases fall into one of these three categories.

With regard to the time of operating, what was stated was based on the idea that surgeons still regard the risk of the operation less when done "in the interval" than during an attack and that, therefore, if an operation can be deferred with safety to the patient until the acute attack is over it is rather better to do so.

THE SURGICAL RELATIONS OF TRAUMATISM OF THE PERIPHERAL NERVES.*

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CHICAGO.

The title of this essay requires some limitation. It is not our purpose to deal with surgical operations on the nerves, nor with resections for the cure of neuralgia, but to consider certain diagnostic relations of the peripheral nerves in the treatment of injuries.

A traumatism of the nerve is frequently overlooked. In an examination of an injured part the surgeon estimates the damage to blood vessels, joints, tendinous and muscular structures, but often fails to take into account the condition of the nerve; hence, a favorable prognosis is not borne out in the subsequent history of the case and the patient is dissatisfied. We have known of several malpractice suits due to a failure to estimate the injury to the nerves. All of these occurred in accidents involving the shoulder, in each case there was a dislocation without fracture, the bones were replaced and the statement was made to the patients that in a few weeks they would recover. The resulting paralysis of the nerve from direct contusion, or from secondary inflammation resulted in a disability which lasted for many months. The prognosis of the surgeon not being borne out by the subsequent history of the case, led to the institution of a suit for malpractice, it being claimed that the surgical attendance was not what it should have been, when, as a matter of fact, it was only the surgeon's prognosis that was at fault.

Late surgery recognizes the general principles in the treatment of the nerves in open wounds; a nerve should be sutured if it has been divided. The results of nerve suture, both primary and secondary, are good, the latter nearly as successful as the former, providing too great a time has not elapsed from the time the nerve was severed. Primary union of nerves may take place in the lower animals. In man, at least, every section of a nerve results in degeneration. In the majority of cases, the nerve regenerates, at least in part, and suture favors this regeneration. The bringing together of the nerve sheath forms a sort of bridge that enables Nature to restore the interrupted pathway. The power which nerves have of regenerating is remarkable, and in some instances they are able to bridge a considerable space in the effort to unite the severed portions.

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* Read before the Dubuque Medical Society

The degeneration of a severed nerve is fully recognized in surgical practice, but it is not so generally known that simple contusion may have the same effect as severing the continuity of a nerve trunk. A contusion may abolish the function of a nerve for a short time, for some hours, but if the function is not restored within a comparatively short time, there may be a degeneration of the nerve the same as though it had been severed. Such degeneration is followed by a regeneration comparable in all respects to that which takes place after section.

A peculiarity of nerve contusion is that it may lead to inflammation, and this, owing to the peculiarities of the structure of a nerve trunk, may result in what is really a pressure paralysis. A nerve trunk is surrounded by a connective tissue sheath from which septa extend into the interior, dividing it into numerous compartments. A nerve trunk of considerable size is made up of a number of bundles, each surrounded by a connective tissue sheath, and from this, smaller trabeculæ support the smallest bundles. This strong fibrous sheath plays an important rôle in the pathology of neuritis. The nerve, like other structures in the body, has its own vascular supply, its lymphatics, and also the special nerve supply which endows a nerve with local sensibility. A contusion often sets up a secondary neuritis; there is a congestion of the nerve, cloudy swelling, edema and distension of the nerve sheath, which is an unyielding connective tissue structure. If the inflammation is of some severity, the swelling compresses the nerve fibers so that we have in addition to the neuritis the phenomena of pressure paralysis.

It might be possible by splitting the nerve sheath to relieve this form of neuritis, just as improvement is obtained by splitting the capsule of the kidney in inflammations of that organ. The practical difficulty is that this neuritis commonly supervenes rapidly, or pressure symptoms are abrupt in their onset, and if they last for a number of hours the nerve will degenerate.

A rupture of a nerve, or its section in an incised wound, is almost always recognized at the time an injury is received. The effect on muscular power is so pronounced that a torn or lacerated nerve will probably be recognized in almost every instance, but the same is not true of contusions. If of sufficient severity to excite a secondary inflammation, the primary symptoms of contusion may be absent, and this is probably the mechanism in the majority of cases. If there is no paralysis at the time the injury is received, it is often concluded by the surgeon that there is no injury to the nerve and that there will not be any. The paralytic phenomena due to neuritis, as well as the symptoms of the latter, are so obscured by the pain and swelling incident to the bone joint and other injuries, that they are overlooked. An additional factor is the fixed dressings that are often necessary in the treatment of dislocations and fractures, by which the paralysis is completely concealed.

It is of some importance to distinguish between the laceration or section of a nerve and simple contusion. We know of no accurate means, aside from actual inspection of the nerve trunk, that enable one to do this immediately after the receipt of an injury, but within five or six hours it is usually possible to do so, as the contused nerve will have regained some power of conduction, even though it ultimately loses that function due to a secondary inflammation. The importance of distinguishing between contusion and laceration relates to the treatment, primary suture being somewhat more successful than secondary, and should be employed. Mere contusion of a nerve, no matter how severe the subsequent neuritis, can never be aided by an operation, as the nerve sheath being intact, nothing that surgery can do will aid in the regenerative process.

The diagnosis of nerve injury after traumatism is by no means simple. As we have said, a severing or a laceration is usually apparent in the loss of motility which occurs immediately after the accident. The same is not true of contusion. Here the loss of conductivity of the nerve may be transitory and at the time the case reaches the surgeon, if he does make an investigation of the condition of the nerve, he finds it apparently unimpaired. In the next few days a peripheral neuritis may appear, with all the paralytic phenomena associated with it.

It may be difficult in many injuries to determine the motility. In fractures and dislocations there is a limitation of voluntary contractions of the muscles. But it is always possible to determine the sensation of the skin, and, as a rule, we have an accurate means of comparison in the uninjured member. Ordinarily an esthesiometer is recommended for this purpose; as a matter of fact a camel's hair brush is by far the best instrument. We have seen a pin used, it being thrust somewhat deeply into the skin, the patient being asked if it is felt. This test is too coarse. In estimating the sensation of the skin, a pledget of cotton, or light brush easily discovers impaired sensation, even when it is not all lost. It is this lessening of the acuteness of sensation which is of diagnostic importance. An accurate diagnosis of nerve injury is not so essential in the treatment, but it is of great importance in prognosis, as it is an awkward experience to tell a patient with a dislocation of the shoulder that he may look forward to a recovery in three or four weeks, when, as a matter of fact, five or six months elapse before he is able to move the elbow from the side. The electrical reactions furnish a valuable means of estimating the motor impairment due to these peripheral lesions, but they require a somewhat complicated apparatus, and furnish no more valuable data than does the simple testing of sensation. It is the latter symptom that the physician should be constantly on the lookout for, and when it is found, a guarded prognosis should be given, as there is a prospect of nerve degeneration with its associated paralytic phenomena.

Injuries to the nerve, complicating fractures, are not very common, and when they occur the nerve is usually torn and there is often associated injury to the blood vessels and other soft parts, so that the vitality of the limb is seriously impaired, or an amputation is needed. In most fractures complicated by nerve injuries, the nerve is torn and consequently the extent of the injury is recognized. The violence which produces a fracture may cause a contusion of the nerve, just as the displacement of the fragments may tear or contuse the nerve trunk. Associated injury to the peripheral nerve is, generally speaking, not common in fractures, but it occurs relatively with greater frequency in the arm than in other parts. The involvement of the musculo-spiral nerve in fractures of the humerus, is quite frequent. The ulnar nerve is commonly involved in fractures of the humerus near the elbow.

In dislocations we have by far the largest number of complicating injuries to peripheral nerves. Especially is this true of the shoulder joint. We are convinced that no favorable prognosis should be given in a shoulder dislocation until at least two weeks have passed, because of the liability of coincident nerve injury. We have seen a complete flaccid paralysis of all the muscles of the shoulder and arm result from a dislocation of the shoulder which had been promptly reduced. There was no regeneration in this case, and the patient two years after the receipt of the injury had a flail-like arm, and not the slightest motion in any of the muscles of the extremity. This case was exceptional, and was probably due to a severe contusion of the brachial plexus, which caused an immediate complete flaccid paralysis. In this case there were no signs of neuritis.

The four malpractice suits that have come under our observation were each of them connected with injuries to the shoulder. All of them were dislocations; the dislocation was reduced, a retentive apparatus used and a favorable prognosis given. Secondary neuritis resulted in paralysis of the deltoid, and in some cases the other shoulder muscles. In every case there were adhesions in the shoulder joints. In one of the cases there was permanent impairment and in the others a fair recovery took place. In the favorable cases recovery was many months after the time that the physician had assured the patients that they would be well.

In dislocations of the shoulder the injury may be to any one of the nerve trunks which comprise the brachial plexus, consequently the distribution of the paralysis is varied. The most insidious is an injury to the circumflex nerve. It results in paralysis of the deltoid; there is inability to carry the elbow from the side and there is always secondary inflammation in the joint. A degeneration of this nerve always means a partial disability of some months.

This injury to the circumflex nerve is readily overlooked. The deltoid alone is paralyzed. A want of motion in this muscle may not be discovered until the retentive apparatus is removed and all signs of local inflammation have subsided. If examined early a loss of sensation will be found over the deltoid region. In every case of shoulder injury the sensation of this region should be carefully tested. If found diminished a guarded prognosis should be given. Involvement of the circumflex is by far the most frequent of all nerve injuries about the shoulder and it is the most insidious.

Dislocations occasionally may injure the sciatic, but this is exceptional. The same rarity of injury to the popliteal is noted in dislocations about the knee. In dislocations of the ankle and tarsus there is frequently contusion and inflammation of the perineal with paralysis of the muscular group supplied by it.

The so-called reflex paralyses due to joint injuries are still referred to in the text-books. The older writers understood by this a secondary atrophy of the muscles above the joint, which they attributed to joint injury and its associated synovitis. In rare cases a contusion of an extremity will lead to a progressive muscular atrophy, involving all the muscles of the limb and later extending to the trunk. These severe cases are exceptional, but the paralysis of the segment of a limb after a blow upon the the joint is not infrequent. In speaking of them as reflex paralyses we are following an ancient nomenclature which was in vogue before our knowledge of the changes in the peripheral nerves was as complete as it is at present. It is probable that these reflex paralyses are caused by a contusion of the nerve, and that the secondary atrophy and paralysis is due to the inflammation of the peripheral nerve following the contusion.

In the prognosis of nerve injury we can generally rely on the tendency which nerves have to regenerate. They do not do so in all cases, but in the majority; a muscle which has been paralyzed, due to a degeneration of its nerve, may be confidently looked upon to have a restoration of that function in time. A nerve regenerates at about a millimeter a day, providing its trophic center is intact. This, of course, varies with the individual, the state of nutrition and the local conditions. After some injuries, and not always the most severe, there is no tendency in the nerve to regenerate. Just why this is so we can not say. Many of these cases seem quite alike in their symptoms, the nature of the injury and the physical condition of the patient. The rule is that regeneration takes place.

One may ask if Nature will restore the continuity of the nerve, what is required in the way of treatment, and will treatment be of benefit when the rate of regeneration is fixed within comparatively narrow limits? We anwer most emphatically that treatment is of great importance, as in all of these cases there are fibrous adhesions in the joint, about the tendons, and possibly in the muscular structures themselves, that seriously impair the movements of a joint, even if the nerve supply is healthy. When a nerve has in part regenerated the first voluntary impulses that reach the muscle are very feeble. If adhesions in the joints or tendons are met with, these slight impulses may be futile in establishing voluntary movement of the muscle. Consequently, a muscle may remain permanently out of use because of mechanical difficulty in responding to the slight impulses which are able to travel over a partially regenerated nerve. It has been experimentally shown upon animals that electricity and massage maintain to a considerable extent the nutrition of a muscular fiber that has been cut off from its trophic center. It is not probable that such treatment would maintain the integrity of the muscle fiber if completely severed for a long time, but it hinders the process of degeneration so that when the connection is re-established there is a better muscular fiber to act on than though such treatment had been omitted. Massage is of great utility in maintaining muscular tone and is also of some value in preventing tendon and joint adhesions which form such a hindrance to the proper use of the extremity after the nerve supply is re-established. When voluntary motion once reaches the paralyzed muscle, and there are no adhesions or mechanical hindrances to the movement of the part, then the patient may safely be left to his own resources, as there is no stimulus to a partially atrophied muscle equal to that of voluntary contraction.

It is impossible to emphasize too strongly the importance of local treatment of joints in injuries to the peripheral nerves. Quite without exception these cases present a chronic synovitis either as a direct result of the trauma or the secondary trophic disturbances due to neuritis. Every case of chronic synovitis has adhesions; the consequent limitation of motion is a fatal hindrance to the restoration of muscular tone.

In studying the surgical relations of traumatisms of the peripheral nerves the following conclusions are justified:

1. Section or laceration of a nerve, if of some size, is usually recognized at the first examination.
2. Contusions of nerves are common, the symptoms often being latent until neuritis develops; the latter may be delayed some days.
3. Contusion of a nerve may complicate any fracture or dislocation, but is especially frequent in dislocations of the shoulder.
4. Injury to the circumflex nerve merits special mention because of its frequency, the ease with which it is overlooked and its serious consequences.
5. The "reflex paralysis" after joint injury is probably due to a traumatic neuritis.
6. The management of the joint tendon and muscular complications comprises in the main the treatment of traumatic neuritis.

103 State Street.

THE OCCURRENCE OF GOUT IN THE UNITED STATES: WITH AN ANALYSIS OF THIRTY-SIX CASES.*

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There are practically no published statistics as to the occurrence of gout in the United States, so that it is difficult to form any accurate idea regarding the relative frequency of the disease in America as compared with Great Britain and the continental countries. In a careful search of the "Index Catalogue" I have failed to find any reference on this point. There is a very prevalent impression among writers on gout, particularly the English authorities, that the disease is extremely rare in the United States. Thus, Sir Dyce Duckworth,[1] writing in 1889, makes the statement that "In the United States of America gout is practically unknown. A few cases are met with in the large cities, but, according to Dr. Da Costa of Philadelphia, the disease has not yet developed among the increasing population." Ewart[2] speaks of the United States and Canada possessing a considerable immunity from declared gout. Dr. Osler,[3] in a brief note on "Acute Gout in the United States" written in 1895, remarks as follows: "The comparative infrequency of gout in this country is a matter of everyday comment. In hospital statistics, and in bills of mortality the disease is mentioned but rarely; thus, it does not occur among the causes of death in the Report of the Medical Officer of the City of Baltimore for 1894." Later he says, "During the session of 1894-95 I had in the ward four cases of gouty arthritis at one time, a unique event in my hospital experience." It is of interest to note here that the 36 cases in the present series, excluding one instance, have all been admitted to the Johns Hopkins Hospital since Jan. 1, 1894, and with one exception to Dr. Osler's wards.

The present and particularly the past conditions of life in the United States are not generally held to be those which favor the development of gout or a uric acid diathesis. In England, where gout is generally conceded to be more prevalent than in any other country in the world, there has for generations been a large leisure class who have been heavy eaters and liberal drinkers and who have led rather inactive, sedentary lives. The conditions that are believed to prevail in America may be best described by again quoting briefly from Sir Dyce Duckworth as follows: "The ancestry, diet and habits of the citizens of the United States for the most part are such as will long prevent the onset of gout in that country. The immigration of Irish, Scottish, Scandinavian and German people into that country peoples it mainly with a stock void of gouty heritage. The good climate and the active open-air lives of the people will tend to avert goutiness. But little wine is used, the beer is light and much water and weak tea is taken. The alcohol chiefly used or abused is rye whisky."

Notwithstanding these generally-expressed views as to the comparative infrequency of gout in the United States, I am inclined to the opinion that the disease is much more frequent than is usually believed. In considering the apparent infrequency of gout in this country the failure to recognize the condition must be taken into account, as Osler has pointed out. There is no question in my mind that many cases are mistaken for rheumatism even when well-recognized tophi occur about the joints or on the ears. The disease is not an unimportant factor from an insurance standpoint. The "Report of the Mortality Records of the Mutual Life Insurance Company of New York" for fifty-six years (from 1843 to 1898) shows that there were 50 deaths from gout out of a total of 46,525 mortalities. This in itself is ample proof that gout is far from being rare in America. The best method of determining the relative frequency of the disease in the United States as compared with southern England, where cases are more numerous than in any other part of the world, is to compare the number of cases admitted to a general hospital for acute diseases in a large American city with the number of cases admitted to a similar institution in London. Thus, for the first thirteen years since the Johns Hopkins Hospital was opened, from May 15, 1889, to May 15, 1902, there were 35 cases of gout admitted to the medical wards out of a total of 13,400 medical admissions, or, in other words, 0.24 per cent. of the cases. For a similar period of thirteen years, from 1888 to 1900 inclusive, there were 116 cases of gout admitted to the medical wards of St. Bartholomew's Hospital, London, out of a total of 31,100 medical admissions, or 0.37 per cent. of the cases. In other words, the gout cases constitute 0.24 per cent. of the total medical admissions in a general hospital in Baltimore while in London they comprise 0.37 per cent. of the medical admissions. That is, in the home of gout the cases are only one-third more frequent than they are in at least one American city. This disparity is not marked and it shows that gout is far from being a rare disease in the United States. In justice to those who claim that gout is rare in America it may be stated that there was only one additional case admitted to the various other services of the Johns Hopkins Hospital during the thirteen years, making 36 cases of gout out of 39,000 total admissions, or only 0.09 per cent. of the cases. A similar comparison at St. Bartholomew's Hospital would, however, probably show a corresponding percentage reduction.

The 36 cases analyzed in this series will serve to illustrate the main features of gout as they are manifested in this country. We will first consider what influence the usual etiologic factors of heredity, alcohol, food and lead have had in the causation of the disease in these cases.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

PREDISPOSING ETIOLOGIC FACTORS.

Hereditary Tendencies.—In only 3 cases was there a definite statement that a parent or grandparent had suffered from gout, or in only 8.3 per cent. of the cases. This is in striking contrast with the statement that statistics show that in from 50 to 60 of all cases the disease existed in one or more ancestors In 9 other cases there was a history of arthritic attacks described as "rheumatism" occurring in the immediate antecedents. The probability is that the majority of these cases were gout rather than rheumatism, as patients usually have an aversion to the statement that there is gout in the family Putting the most liberal interpretation on these cases described as rheumatism and considering them as cases of true gout it would give us 12 cases with a family history of gout, or 33 3 per cent. of the cases. This evidence would seem to go to show that gout in this country is in the majority of cases freehold, not copyhold, to use the division of old Sir William Browne.

Alcohol—Alcohol has always been considered a potent etiologic factor, and the form is probably as important as the quantity. Fermented liquors such as wine beer, ale and porter are much more injurious than the distilled liquors, as whisky, rum, etc Thirty-four of the 36 patients used alcohol in some form or other. Regarding the other two there is no record as to their alcoholic habits Two of the 34 patients used whisky alone We have made it a point to ask carefully in all gout cases regarding their alcoholic habits and there is a preponderance in the number who have used fermented over those who have used distilled liquors in excess. Beer has been the beverage mainly used, although nearly every beer drinker has drunk whisky also, either moderately or in excess; none of the patients used wine Alcohol would have appeared to have played an important part in the etiology of these cases although the lighter beers of this country are not so likely to predispose to the development of the disease as are the heavier beers and ales of England

Food—The character and quantity of the food can hardly be said to have been a powerful causative agent. The patients did not belong to a social class capable of obtaining abundance of highly-seasoned, nitrogenous food Nor were they able to lead sedentary lives, as the majority belonged to the laboring classes and required to work for a livelihood Ten stated that they were heavy eaters, 5 being particularly heavy meat eaters.

Lead—How and why lead proves to be such an important factor in the production of gout is still a question requiring explanation. Although Musgrave, Huxham and Falconer (1772) had called attention to this association, it remained for Garrod[4] to emphasize this point He found that at least one in four of the gouty patients who had come under his care in the hospital, had at some period of their lives been affected with lead, and for the most part had been either plumbers or painters Garrod showed that the blood of patients suffering from lead poisoning contains an excess of uric acid, and it is generally held that the increased liability of lead workers to gout is due to the metal producing arteriosclerosis and chronic nephritis with consequent renal inadequacy.

In only one of our cases was there definite evidence of the patient suffering from lead poisoning. The patient was a painter and was admitted to the hospital suffering from lead colic. There were, however, in all, 8 cases whose occupations exposed them to lead poisoning. Five of these were painters and three were tinners Thus in 22 per cent. of the cases lead was undoubtedly an important etiologic factor, a percentage very close to that noted by Garrod. It must, then, be concluded that lead is also an important etiologic factor in the United States

Nationality.—In considering the frequency of gout in this country it is important to note the nationality of the victims. Twenty-seven of the 36 patients were native-born Americans; 4 were born in Germany; 3 in Ireland and 1 each in Canada and Finland. It will thus be seen that only a small number of the cases occurred in immigrants In none of these 9 foreign-born patients was there a definite history of gout in the ancestors, although in 1 there was a history of "rheumatism."

Age and Sex—The ages of the patients on first admission to the hospital according to decades was as follows: From 1 to 10 years, no cases; 11 to 20, 1 case; 21 to 30, 1 case; 31 to 40, 10 cases; 41 to 50, 12 cases; 51 to 60, 7 cases; 61 to 70, 4 cases; 71 to 80, 1 case. The greatest number of cases, 12, occurred between 41 and 50 years, or in the fifth decade The youngest case was in a boy 17 years old. This is an extremely early age for gout to manifest itself. Gairdner has reported fits of gout in infants at the breast. Cases are extremely rare under 20 years. The rarity of the disease in children and minors is illustrated by Scudamore's statistics of 515 cases. Only 4 occurred before the age of 17, the youngest being 8 years old There were but 13 in the first two decades. When gout appears in very young individuals it nearly always is inherited The oldest patient in our series was 75 years of age His first attack, however, had occurred at the age of 48

Gout is much more common in males than in females. Women appear to possess a relative immunity. Of the 116 cases at St. Bartholomew's Hospital in 13 years there were 95 in men and 21 in women. It would appear that females in the United States are even less frequently affected. Our 36 cases were all in males. They were all whites and I know of no instance of gout occurring in a negro

Social Position—The cases nearly all occurred in individuals in the lower walks of life. Only 2 of the 36 were treated in the private wards, the remainder having been admitted to the public wards of the hospital.

Occupation.—The occupations of the patients were varied. As having a special bearing on the etiology of the disease it may be recalled that 5 were painters and 3 tinners. Three were bar-tenders or saloon keepers The frequency with which the latter are liable to be heavy drinkers renders them also specially prone to gout.

Disturbance of Metabolism.—I do not purpose to enter into a discussion of the various chemical theories and their relative merits that have been advanced to explain the disturbances of metabolism that actually give rise to the gouty condition. I may be permitted to refer briefly to my own personal observations regarding the uric acid curve in relationship to the acute attack and the quiescent intervals. In a number of cases carefully followed by the Hopkins' method, or Folin's modification of it, I have almost invariably found that before the onset of the acute symptoms the uric acid is below and often far below 0.4 grams, the lower normal limit for the daily excretion of uric acid in health. On the second or third day after the beginning of the acute symptoms the uric acid curve steadily rises, reaching

0.8 to 1.0 gram, the upper normal limit for the daily uric acid excretion, or even higher than this. With the subsidence of the acute symptoms the curve gradually falls below the lower limit for normal, and in the interval between the acute attacks the excretion may be only 0.1 to 0.2 gram daily. In one very marked chronic case I failed to find any uric acid excretion whatever on certain days during the interval.

I have been particularly interested in observing the relationship between the uric acid and phosphoric acid curves in reference to the acute attack. The results of these investigations will be published later, but I may say that I find that the two curves run almost parallel, the phosphoric acid curve rising with the uric acid curve during the occurrence of the acute symptoms and falling in the intervals. This observation has an important bearing on the question as to the origin of uric acid and strongly supports the view that the uric acid is largely derived from the body nucleins, phosphoric acid being a well-known product of nuclein disintegration. Bain[5] has found a similar relationship between the two curves. On the other hand, Chalmers Watson[6] claims that there is no such association.

CLINICAL TYPES.

Acute Gout.—Three cases were admitted during the initial arthritic attack. These were the only cases of acute gout in the series.

Chronic Gout.—The remaining 33 cases were all chronic, the patients having had several attacks before coming under observation. The shortest duration of any of the cases in this group being one and one-half years, the majority, however, having lasted for a much longer period.

Tophaceous Gout.—In 17 of the 33 chronic cases, or 51.5 per cent., tophi were present. The existence of the tophi made the diagnosis certain and indicated the chronicity of the disease in these cases. The distribution of the tophi was as follows: In 15 cases they were present over the cartilage of one or both ears. They were present in 4 cases in the subcutaneous tissue over the elbow joints and in one over the patella. In these situations they closely resembled the subcutaneous fibroid nodules of rheumatism. In 4 cases they occurred about the finger joints and once over the big-toe joint. One patient had a huge tophus measuring about 5x3 cm. over the left tendo Achillis, and another had a large group of them over the sacrum. In 3 cases suppurative bursitis occurred, resulting from the deposition of sodium biurate in and about the bursal sac. In one case the bursa over the olecranon was involved and in the 2 other cases the prepatellar bursa was the seat of the suppurative inflammation. In both cases the characteristic acicular crystals of sodium biurate were obtained from the purulent contents. In two cases there was suppuration of the tophi about the finger joints and once of a tophus over a big-toe joint. Altogether suppuration of the tophi occurred in 5 cases.

Cardio-vascular System.—The peripheral vessels, particularly the radials, showed a more or less marked grade of sclerosis in 23 cases. The heart was moderately enlarged in 3 patients and there was a mitral systolic murmur, indicating a certain grade of insufficiency, in 5 cases. In only one case was there very definite evidence of marked myocardial disease. This patient had a persistent embryocardia. One of the fatal cases died with a terminal serofibrinous pericarditis.

Urinary System.—It is interesting to note the great frequency with which there were evidences of changes in the kidneys in the series. In 14 of the cases the specific gravity of the urine was persistently below 1015. Albumin was present, usually in small traces, in 27 cases and hyaline or finely granular casts, or both together, in 23 cases. We may say, then, that in 27 of the 36 cases, or in 75 per cent. of the patients, there were strong evidences of more or less serious organic renal disease. Considering the persistently low specific gravity of the urine in 14 of these cases, the probabilities are that the disease had advanced to the chronic interstitial stage in more than 50 per cent. of the cases in which albumin was present.

In the two fatal cases of the series the kidneys were found at autopsy to be very much contracted and the seat of advanced chronic interstitial nephritis. One of the cases died of uremic coma.

I would like to help to correct the impression, apparently held by many practitioners, that a uric acid sediment in the urine indicates a gouty tendency. The power of the urine to hold uric acid in solution is dependent on so many factors, such as the amount of pigment and the percentage of salts present, that but little significance can be attached to the existence of a uric acid sediment. In none of the 36 gout cases was there a uric acid deposit made out on either gross or microscopic examination, even in the acute attack. This affords abundant evidence that a uric acid sediment in the urine is not by any means a necessary accompaniment of gout. Glycosuria was not present in any of the cases.

COMPLICATIONS.

Bursitis occurred in 3 cases. The prepatellar bursa was inflamed twice and that over the olecranon once. In one of the cases it was a suppurative bursitis, and in all three instances the bursæ required to be opened. Unilateral parotitis occurred once. This is a very rare complication, but has occasionally been described. Serofibrinous pericarditis was a terminal event in one case. This patient illustrated some of the remarkable features of retrocedent or visceral gout. The acute joint symptoms had practically subsided when marked abdominal symptoms manifested themselves. There was intense pain in the umbilical region with marked abdominal distension. These lasted for a week, gradually getting worse. His symptoms were believed to be due to possible intestinal obstruction or to peritonitis, and his condition seemed to demand operation. Nothing was found at operation to explain the enormous intestinal distension. The patient died a few hours later, the autopsy revealing a pericarditis and small contracted gouty kidneys. There were but few skin complications. There was one case of acute eczema and one of herpes zoster.

MORTALITY.

Two patients in the series died in the hospital. The main features at autopsy in each case have already been briefly referred to.

DIAGNOSIS.

In a certain percentage of the cases, with a history of recurring attacks limited to the big toe and tarsal joints and occurring in a member of a gouty family, there is little difficulty in arriving at a proper diagnosis. Unfortunately, however, as experience has shown, the diagnosis is not so simple. In many cases the arthritic attacks are not limited to the feet, and a multiple arthritis may occur involving some of the medium-sized and larger joints, and these are liable to be mistaken for and treated as rheumatism. This was the case in 4 of our series, the cases having been repeatedly admitted and discharged with a diagnosis of rheumatism. Eventually the cases returned with characteristic tophi on the ears or about the joints, revealing without a shadow of a doubt the true nature of the affection. Two of these cases had subcutaneous tophi in the region of the elbows when they were being treated as rheumatism, but these nodules were taken to confirm this diagnosis because they were believed to be rheumatic fibroid nodules. Sections of these after their removal subsequently showed them to be tophi, their centers containing deposits of sodium biurate. In a case of arthritis with doubtful diagnosis accompanied by persisting subcutaneous fibroid nodules the removal and histological examination of one of the latter may absolutely settle the diagnosis. As our statistics have shown, tophi are by far most frequently found in the ears, and Dr. Osler has strongly emphasized the importance of the careful inspection of the latter in all cases of multiple arthritis of doubtful origin. The contents of any whitish, chalky-looking body occurring over the cartilage of the ear in such cases should be examined microscopically. The finding of the characteristic acicular needles of sodium biurate immediately settles the case as one of gout. Small fibroid nodules, Woolner's tip and minute sebaceous cysts may be mistaken for tophi, but the microscope serves to differentiate them.

The character of the uric acid curve can be used in institutions to assist in the diagnosis, but this is not possible in private practice. The occupation of the patients should be carefully enquired after. The occurrence of recurring arthritic attacks in painters, plumbers, brewers and saloon keepers should lead one to strongly suspect gout.

SUMMARY.

1. Gout in the United States is undoubtedly more common than is generally supposed.
2. Out of 13,400 medical cases admitted to Dr. Osler's wards in the Johns Hopkins Hospital during a period of 13 years there were 35 gout cases, or 0.24 per cent. of the total number of patients. For the same number of years at St. Bartholomew's Hospital there were 116 gout cases out of a total of 31,100 medical admissions, or 0.37 per cent. of the cases. Thus, among hospital patients gout is only about one-third more frequent in London than in Baltimore.
3. All of the 36 cases were white males. The largest number of cases occurred in the fifth decade. Twenty-seven of the patients were native-born Americans.
4. The majority of cases appear to have earned rather than inherited their gout. Alcohol and lead seemed to be the most potent predisposing etiological factors.
5. Thirty-three of the 36 cases had reached the chronic stage before they came under observation. In 17 of the cases tophi were present.
6. Among the more interesting complications may be mentioned 3 cases of gouty bursitis; 1 case of parotitis; 1 of pericarditis; 1 of retrocedent gout with symptoms simulating intestinal obstruction.
7. There was evidence of disease of the kidneys in the majority of the cases. Albuminuria occurred in 27 and hyaline and granular casts in 23 instances.
8. Arteriosclerosis was present in 23 cases and a mitral systolic murmur in 5.
9. Many gout cases are mistaken for rheumatism. Four of the cases were repeatedly diagnosed as such on the early admissions, the appearance of tophi later revealing their true nature.
10. The series illustrates the great importance of examining the ears and the vicinity of the joints for the presence of tophi in all cases of multiple arthritis.

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DISCUSSION.

Dr. Richard C. Cabot, Boston—I was much surprised at the frequency of cases of gout as reviewed by Dr. Futcher. Among 28,000 cases in the Massachusetts General Hospital received in ten years there were but four cases of gout, and I doubt if many were unrecognized. It seems to me that there are considerable grounds which lead to the belief that gout is a rare disease in this country. I should like to ask whether he sees any reason in believing that the uric acid curve throws any light on the etiology of gout. Also, whether he believes the so-called visceral or retrocedent gout can be explained as uremia.

Dr. James J. Walsh, New York—Undoubtedly a certain number of cases of so-called rheumatism in which the salicylates fail to be of benefit are really cases of gout. Gout is more frequent in this country than has been thought, and after the confession from Professor Osler's clinic of their mistake of gout for rheumatism three times in one patient any of us will be encouraged to remake our diagnosis of intractable rheumatism with the gout element in mind. On the other hand, I have seen cases in which the existence of the so-called Heberden's nodes gave rise to the suspicion of the existence of gout. Personally I have never considered that the affection had anything to do with true gout. The nodes on the fingers develop absolutely without pain, and tenderness is present only when the fingers have been knocked against something. The English experience is, I believe, that these lesions have no connection with gout, and it is even said that the patients who have them have a distinct tendency to longevity. The affection is certainly not specially limited to the direct descendants of the English, for among the cases that I have recently seen two were native Americans with American ancestry for at least four generations, one was Irish and the fourth was a Swede. I should like to know if others have noticed any connection between this affection and true gout.

Dr. George Dock, Ann Arbor, Mich.—I think Dr. Futcher has presented to the Section one of the most important papers read in years. Although the disease is certainly rare in this country it is important that our attention should be called to it from time to time, and especially as it has been called today. We have now a fairly accurate history of atypical cases of gout. My own observations are entirely negative. I was very much surprised to hear it said by Dr. Cabot that gout was relatively infrequent in Boston. One would expect conditions not unlike those in Baltimore. On the contrary, in my part of the country, with a rural population, I seldom find gout, although I am constantly looking for it, and have been for years. Patients with Heberden's nodes frequently come to one with the idea that they have gout; in my experience none of these people have gout. Whether they enjoy longevity or not I can not tell; in my experience they have often been the sort of people who we expect to live long unless overtaken with some dangerous intercurrent disease, people of tough fiber.

Dr. Allen A. Jones, Buffalo—I wish people would record the etiologic significance of the uric acid. I should like to know more regarding the blood condition in these cases. I have always regarded Heberden's nodes as not being a manifestation of gout. I wish Dr. Futcher would speak on the use of colchicum in the treatment of chronic gout. Gouty nephritis being so constant and common and nephritis being associated so persistently with alcohol and lead poisoning, has led me to consider the gouty manifestations as really a chronic intoxication; the nephritic manifestations being coincident with the gouty manifestations made me think that possibly they were due to the same causes. In private practice I have had but two typical cases of gout occurring in American born; in both cases it occurred in the great toe of the right foot, each joint being as typical as described by the English writers.

Dr. J. A. Witherspoon, Nashville, Tenn.—Regarding the occurrence of gout in the negro race I should like to report an atypical case. This patient, a man, was a porter in a saloon for years. He was not a pure black negro. He had repeated attacks in the great toe, suffering exquisitely; he also had tophi in both ears. Some of these deposits I removed and examined. They proved to be the biurate of sodium. He also had a number of deformities on his fingers and toes. Another patient invariably began his attack with an acute tonsillitis; this would soon be followed by acute pain in his toe and the usual symptoms of gout. This patient has repeatedly removed some of the nodules from the joints and many of them I have removed. I am inclined to believe that gout is more frequent than is generally supposed in this country. Nor do I agree that negroes are immune.

Dr. A. C. Croftan, Chicago—The factors that determine the excretion of uric acid are two-fold: (1) uric acid is derived from the uric acid forming substances contained in the food; (2) uric acid is produced by catabolism of tissues of gouty subjects themselves. I do not believe that the determination of uric acid in the urine is of value unless the exact uric acid content of the food is known and the uric acid forming substances it contains are also established. This is manifestly difficult and impractical. The only point with regard to uric acid excretion that I have been able to determine is that it is subject to the same fluctuations in gouty conditions as in normal persons or sufferers from many other diseases. The power of the gouty subject to destroy the uric acid ingested is, however, reduced. If you give a normal subject a definite proportion of uric acid (or nuclein, etc.) a certain small percentage of uric acid is excreted and this is almost constant in relation to the amount ingested; in gouty subjects I have found that this power to destroy uric acid in its passage through the body is reduced. In other words, if a given subject is fed a weighed quantity of uric acid, while the diet at the same time is purin free, and he then excretes more uric acid than he should from the amount taken in, the result may be of importance in rendering the diagnosis of uric acid diathesis. I believe that there is much evidence to show that one of the characteristic features of gout and goutiness (the uric acid diathesis) is the inability of the patient to destroy as much uric acid as a normal subject. This condition is parallel to the inability of the diabetic subject to destroy sugar and the obese subject to destroy fat. What is not destroyed accumulates in the blood and is either retained as deposits or excreted in the urine, hence urate deposits, fat deposits and sugar excretion in these disorders of nutrition.

Dr. Futcher, in closing—With regard to the uric acid curve in its relation to gout I believe that I am as skeptical as Dr. Cabot is as to its bearing on the etiology. Diminished uric acid output may be of diagnostic value in cases which can be followed in the hospital. I think it is quite possible that symptoms of retrocedent gout may in part be due to uremia, although there must be other factors in the causation of these remarkable symptoms. Of course all cases of chronic gout have marked renal changes as a rule; the abdominal symptoms may be a manifestation of uremia. The explanation of these cases of retrocedent gout is not at all clear. I am sorry that I can give no information regarding the bacteriologic examinations in the cases of inflammation of the serous membranes. I neglected to consult the records on this point. There were only two cases of Heberden's nodosities recorded in the thirty-six cases of gout. I think the general view held is that they are manifestations of arthritis deformans rather than of gout. The temperature is nearly always elevated in the acute cases, arising to 102 or 103 degrees and gradually subsiding as the acute symptoms disappear. I did not gather any statistics as to the blood count, but my general impression is that there was a slight leucocytosis during the acute stages. In a number of the cases I tried to demonstrate the presence of the uric acid by the Garrod thread test, but failed to demonstrate crystals.

The Coming Specific.—Doubtless what cured King Edward will soon be put on the American market for $1 a bottle.—*Chicago News.*

TRICHOPHYTOSIS.

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The too frequent prevalence of ringworm and the importance of its prophylaxis have induced me to offer the following observations and suggestions, hoping that they will emphasize one or more points as to the etiology of this inconvenient disorder.

The disease is always produced by the trichophyton. White of Boston has called especial attention to the frequency of its origin in the barber shop, a fact which common experience verifies. But how does it get there? All authors say, from the domestic animals, viz., dog, cat, horse, white mice, to man. In the stock-raising districts I think the most frequent source is from cattle, and especially from yearling calves. I say yearlings, because I do not think older cattle as good soil for the production of the parasite. The farmers handle their stock, become infected, go to the barber shop and get shaved, and the next person to take the chair gets the disease, and thus it is spread.

The farmers call the disease "barn itch." A young farmer applied to me in the winter of 1900 with ringworm on his wrist and a small patch on his chin; said he got it from his calves and had it the year preceding. I asked one of our veterinary surgeons to go out to this farm with me. We lassoed a calf. Examining the animal we found whitish, circular crusts along the nape of the neck, sides of neck, face and nose. The crusts were piled up, having a depth of a quarter to one-half inch, and having the appearance of broken asbestos. We procured some of the crusts or scales, examined them under the microscope and found them to be the spores of ringworm. I procured some more scales from the same farm, April, 1902, and found an abundance of spores. A short time after procuring the above we procured scales from two horses in which Dr. Albert and myself found the fungi of ringworm.

The clinical picture of ringworm in the horse is very different from that found in the calf. In the horse the patches are round or oval, with loss of hair, the scales or crusts are of a grayish-blue or mouse color and have a mangy look, similar to the patches found in the dog and cat.

A peculiar result in calves is that when they are turned out on grass in the spring they get well without treatment—a very unfortunate thing for the human race. If they did not get well without treatment the farmers would be more careful to have the disease stamped out. I think the perpetuation of the disease is caused by the fact that the disease causes itching and the animals scratch and rub themselves against the boards, posts and feeding racks of the cattle sheds. The next fall a new crop of calves are put into the same sheds, which have not been disinfected so as to destroy the parasites, and thus the disease is perpetuated from year to year to the coming stock as well as to man. Within the last eighteen months I have been able to trace sixteen cases of ringworm to calves, three to a cat; a few I have been unable to trace. It seems that when a person contracts this disease from the lower animals direct it is very much more virulent than from human to human.

The remedy is obvious: A man should let the beard grow or shave himself. If he does patronize barbers he should have an entire outfit of his own, viz., razor, strop, brush, cup, etc., and his own alum stick; sponge or powder puff should not be used. Then, if the barber washes his hands before shaving and uses clean towels.

one could be reasonably safe to be shaved in a barber shop.

In this city some of the barbers attempt to run an aseptic shop. They disinfect their strops in the morning and the razor before using it on each patron. But a preceding patron may have contaminated the strop, and the next customer, of course, stands a chance to become infected. Another great disseminator of germs is the clipper. After use it is wiped and laid away without being disinfected.

In the spring of 1901 a young farmer applied to a physician in our city for an eruption on his face. He asked the physician for a diagnosis, who quickly said, "barber's itch." The young man returned to the barber shop in which he had been shaved and demanded his cup and brush, telling the barber he had contracted the disease in his shop. In about a week he came to the city and his physician was not in. He came to the writer. I diagnosed or traced his ringworm to his own calves and showed that he was the means of bringing it to the barber shop and spreading the disease instead of getting it in the shop. After understanding the source of his disease he returned to the barber shop, and on his apologizing all was well, except the reputation of his first physician, against whom the barber threatened to bring action. Thus one can see how a mistaken diagnosis could cause a suit for damages.

Clinical Report.

A NEW CASE OF SYPHILITIC TUMOR OF THE STOMACH.

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The literature on syphilis of the stomach can be found in a paper[1] on the subject I wrote a few years ago. I divided syphilis of the stomach into three distinct groups: 1, gastric ulcer of syphilitic origin; 2, syphilitic tumor of the stomach; 3, syphilitic stenosis of the pylorus. The second group, "Syphilitic tumor of the stomach," appears to be the most interesting one. For, on one hand the resemblance to cancer of the stomach is great, on the other hand the diagnosis, while at first merely probable, can soon be made positive by the result of treatment and the gradual disappearance of the growth.

As cases of syphilitic tumors of the stomach are quite rare I take pleasure in reporting the following new observation:

Max F., 42 years old, has been complaining for the last seven years of digestive disturbances. He frequently suffers from gastric pains. His appetite is poor and the bowels are slightly constipated. He has not lost much in weight, altogether about eight pounds. He had syphilis twelve years ago.

Present condition (March, 1901): Patient looks somewhat thin and pale. His tongue is slightly coated. Chest organs do not reveal anything abnormal. In the epigastric region about two fingers below the ensiform process a distinct resistance (about 5 cm. long and 2 cm. wide) presenting a nodular surface can be mapped out. The stomach lies directly underneath and extends downward to about one finger's width above the umbilicus. The knee reflex is intact. The urine does not contain any sugar or albumin. The examination of the gastric contents one hour after Ewald's test breakfast shows: HCl + Acidity = 40; no stagnation of food.

In this case there was no question about the presence of a tumor in the stomach. Ordinarily the existence of a malignant growth would suggest itself. Several prominent physicians and surgeons had in fact made a positive diagnosis of cancer of the stomach and had urged operative intervention. At first sight I likewise entertained a similar view. On further reflection, however, there were several features in the case which spoke against cancer of the stomach: 1. The long duration of the disease—7 years; second, absence of any considerable loss of flesh; 2, presence of free HCl and no stagnation of food in the stomach. These data in conjunction with the fact that patient had had a syphilitic affection justified the assumption that we may have to deal here with a gummatous growth of the stomach.

I presented patient at one of my lectures at the Post Graduate Medical School and gave these reasons for the belief that we have to deal here probably with syphilis of the stomach All the colleagues at the lecture corroborated the existence of a distinct tumor as above described.

Patient was now subjected to a rigid antiluetic treatment iodid of sodium internally and rubbings with mercurial ointment—and he began to improve quickly. The gradual diminution of the tumor could be observed each time the patient was examined, until after the lapse of six weeks nothing of the resistant mass could be discovered. At the same time the patient gained in strength and in weight, and after a period of three months he was practically free from any digestive disturbances. He has remained well ever since, and so far has had no recurrence of his old stomach trouble

It may not be out of place to outline the points of differential diagnosis between a gummatous growth and malignant neoplasms of the stomach. In the case here reported there was a history of gastric disturbance for seven continuous years, which did not tally with carcinoma of the stomach. This, however, need not always be the case. In my former paper on syphilis of the stomach I have described two cases of gastric tumor with a short history of the disease, which were nevertheless of syphilitic origin.

The presence of free HCl is also no positive proof against cancer, and may be missing in gastric gumma.

Ischochymia appears to be much rarer in syphilitic tumor of the stomach than in cancer of this organ.

A previous history of lues while suggestive of the existence of a syphilitic affection can not be taken as of great weight in any direction. For, on the one hand syphilitic patients are frequently enough afflicted with cancerous affections; on the other hand, a gummatous growth in the stomach is sometimes discovered in a patient not giving any definite data of a previous syphilitic disease.

While the above symptoms—long history of gastric disturbance, presence of free HCl, absence of ischochymia, distinct history of syphilitic disease—if all present may justify the surmise of a luetic nature of a palpable growth of the stomach, still a positive diagnosis can be made only under the following conditions: 1. An antisyphilitic treatment improves the subjective symptoms. 2. It also effects a gradual disappearance of the growth, so that ultimately it can not be discovered by palpation.

With regard to treatment the administration of the iodids—iodid of sodium, iodid of potassium, iodipin—seems to be of the greatest importance and may alone effect a cure. This, however, is certainly accelerated by the addition of mercury. I usually apply the old but still very rational method of rubbings with hydrargyrum salve. This mixed treatment should be applied uninterruptedly for about 3 months and the iodid of sodium continued for two to three months more.

The diet should be a liberal one, excluding, however, highly spiced and also too coarse foods. Plenty of bread, butter, milk and eggs can be warmly recommended.

Electric Light on the Eyes.—A Russian physician has decided that, contrary to the general opinion, electric light plays less havoc with the eyes than other forms of illumination. He bases his deductions on the fact that disease and damage to the eye is proportioned to the frequency of closure of the lids. He has found that the lids close in a minute 6.8 times with candle light, 2.8 times with gas light, 2.2 with sunlight and 1.8 times with electric light. While this fact may be true for the external portion of the eye, it is clinically proved that retinal and muscular asthenopia are greatly increased by electrical illumination and the reflex conjunctivitis and blepharitis are made worse.—*Toledo Med. and Surg. Reporter.*

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[1] Max Einhorn: Syphilis of the Stomach. Philadelphia Med. Journal, Feb. 3, 1900.

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ACUTE DILATATION OF THE STOMACH.

There are many features in connection with acute dilatation of the stomach that merit attention and further investigation. In the first place the condition has not received the attention it deserves. This is shown by the absence of any adequate discussion of it in most of the popular text-books of the day, and even in the best of them. And there is reason to believe that acute dilatation without pyloric obstruction is frequently overlooked by physicians and surgeons, probably because of lack of familiarity with its occurrence and its principal characteristics. H. Campbell Thomson's[1] recent collection of cases and summary of the chief features will therefore undoubtedly prove useful. He has collected forty-four cases, which he divides roughly into five groups according to mode of origin: Those cases without apparent cause or lesion after death; those showing after death other definite lesions; those following surgical operations but without other lesions after death; those apparently following dietary indiscretions; and finally, those following injury. Thus twelve of Thomson's cases followed surgical operations, four of which were abdominal and three of these again were connected with the gall-bladder and ducts. One of these three cases is reported by Fenger and Hessert.[2] It may be taken as a type of acute dilatation of the stomach. Shorn of all detail, interesting though much of it be, the case, one of cholecystotomy, which progressed favorably for five days, was marked by sudden onset of repeated vomiting, grave general symptoms, tympany beginning in the upper part of the abdomen, temporary relief of practically all symptoms by the passage of the stomach tube, large quantities of fluid being withdrawn, and death five days after the beginning of the vomiting. At the autopsy nothing remarkable or abnormal was found except a greatly dilated stomach.

It is of interest to note that acute dilatation may develop in connection with severe general illnesses, such as pneumonia, typhoid, etc. Age or sex does not seem to be of any decisive import, most of the recorded cases having occurred between the ages of 20 and 30 years. After death the stomach appears as a tightly-distended cylinder, shaped like a V, one limb, the pyloric, being shorter than the other. No definite microscopic or macroscopic changes have been noted in the stomach, and in the majority of the cases there were no signs after death of pyloric or intestinal obstruction. The prognosis is extremely bad, but Thomson believes that cases of moderate severity, ending in recovery, have not received any attention, and that when the disease is studied more closely it will be found to present itself in varying severity.

We are not able now to account for this acute dilatation of the stomach. Its development under so many varied circumstances indicates either that it is dependent on many different causes, operating in many ways perhaps, or on some one essential cause that as yet has escaped completely our attention. That all cases are caused by constriction of the duodenum from traction on the superior mesenteric artery[3] does not seem possible, because in many cases there is continuous distension of the entire duodenum far into the jejunum. Thomson favors the view that paralysis of the stomach wall is the primary event. Muscular contraction of the stomach is not necessary to produce vomiting; that may take place from compression of the stomach by the abdominal muscles and the diaphragm when the cardiac orifice is dilated. The paralyzed stomach would become dilated from the accumulation of gas and fluid in its cavity. But no satisfactory cause of this paralysis has been found as yet. The influence of toxins on nerves and nervous centers, neuritis, myositis have been suggested, but in the absence of any definite data, histologic or experimental, bearing on this obscure problem, nothing decisive is gained from discussing possibilities. The mechanism whereby is poured out the excessive secretion in these cases is also beyond rational explanation at this time. It would seem likely that well-planned experiments might reveal something of the real factors at work in this so-called paralytic secretion.

The treatment of a disease whose real cause and nature are not well understood must of necessity largely be symptomatic. Where there is excessive secretion this should be removed by the stomach tube in the hope that the stomach may regain its tone and successfully empty itself. The prone position and the knee-elbow position may be tried in order to relieve obstruction caused either by pressure of the distended stomach or possibly by the dragging of the intestines on the mesenteric artery as it crosses the duodenum. Thomson suggests gastro-jejunostomy, especially if when laparotomy has been made there seems no chance to help the patient by correcting the position of the viscera.

A NEW OPERATION FOR THE RELIEF OF PYLORIC OBSTRUCTION.

Within the past few years it has come to be recognized more generally that not all forms of chronic dyspepsia which has gone under such a variety of names, are necessarily hopeless, even after medical means have been given a thorough trial. The number of surgeons reporting the successful operative treatment of these cases of so-called motor insufficiency, chronic dyspepsia and neurasthenia, is increasing from year to year. A large number, if not a vast majority, of the chronic stomach affections which are amenable to successful surgical treatment are caused by either gastric ulcer or its sequels and are accompanied by more or less interference with the emptying of the stomach. The operations which have been in general use for the relief of such conditions in the past have been gastroenterostomy and the pyloroplastic operation devised by Heincke and Mikulicz. Each of these methods has its drawbacks, and this has given rise to a number of modifications of the methods of gastroenterostomy and pyloroplasty. Simple anterior gastroenterostomy has frequently been followed by spur formation and the so-called vicious circle, by which the contents of the intestine are carried by peristalsis into the stomach and thus give rise to intractable vomiting which, unless relieved, results in death. Many surgeons believe that posterior gastroenterostomy gives more satisfactory results, but the vicious circle still occasionally occurs.

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[1] Acute Dilatation of the Stomach. New York: William Wood & Co. 1902.

[2] Chicago Clinical Review, 1898.

[3] See discussion of Albrecht's article in The Journal, Aug. 19, 1899, and Feb. 9, 1901.

To avoid this disagreeable sequel to operation, various methods have been devised, such as a supplementary enteroanastomosis, Roux's Y anastomosis, etc., but these methods add considerably to the length of the operation, and in the case of patients considerably reduced in strength by disease, as is often true in this class of cases, the added time may be a factor of great importance. Pyloroplasty has the decided advantages over any of the methods of gastroenterostomy that it leaves the opening for exit of food from the stomach in the position in which Nature placed it, and that the vicious circle never follows. On the other hand, if there be a great deal of dilatation of the stomach, the organ is not sufficiently drained by the operation of Heincke and Mikulicz: in certain cases recurrence of the stricture has followed from contraction of the scar, and in a considerable number of cases the operation is impracticable because of extensive and firm adhesions to the pylorus or because of great inflammatory thickening of the region of the pylorus. Thus it is seen that neither of these operations has proved entirely satisfactory.

Finney[1] has described a new and original method of pyloroplasty which seems to combine the advantages of both gastroenterostomy and the pyloroplastic operation of Heineke and Mikulicz without the disadvantages of either. His operation is really a subpyloric gastroduodenostomy by lateral anastomosis. The duodenum just below the pylorus is folded directly on to the stomach and held in place by a line of sutures. A second row of sutures is placed, but drawn to either side, and after walling off the peritoneal cavity with gauze, an incision is made through the wall of the stomach and the wall of the duodenum, passing directly through the pylorus. The scar tissue in the region of the pylorus is removed as far as possible and a continuous catgut through-and-through suture is taken through all the coats of the intestine and stomach on the posterior side of the incision. The anterior sutures are then drawn out and tied and a few reinforcing sutures may be placed if desired. The operation should take but little if any more time than the ordinary gastroenterostomy and much less time than gastroenterostomy combined with any other form of entroanastomosis. Finney reports five cases of operation by this method, and several other cases have since been operated on. From what we know of the operation and its results we believe that he is justified in his conclusion that his operation combines more good points and less objectionable features than any other method for the relief of pyloric obstruction which has been suggested up to the present time.

PHYSICIANS AND LONGEVITY.

It has often been said that it is not work but worry that kills. Perhaps no better exemplification of the truth of the saying can be found than the number of hardworking physicians, occupied unceasingly with great problems in medicine, who have nevertheless lived to what may well be considered an advanced age. Virchow's long life of nearly 81 years of strenuous devotion to work, so recently closed, is only a type of the prolongation of existence and usefulness that has fortunately been the lot of some of the greatest of the medical investigators. Longevity has been the rule, however, not only for the laboratory worker who in the placid preoccupation of original observation avoided the distraction of mind and the diversion of activity incident on medical practice, but also for the man who is able to combine both successfully. In fact, while the average life of the practicing physician is the shortest of any of the professions, most of the great investigating practitioners have lived lives so long as to encourage every medical man to take up original observation, if with no other idea than that of assuring himself longevity.

The great Greek father of medicine, Hippocrates, set a worthy example by living until he was nearly 83 years of age. Galen, his worthy successor in influence, lived at least beyond his seventieth year. In more modern times Harvey, the discoverer of the circulation, always interested in medical investigations, yet never neglecting the practical side of medicine, passed his eightieth year. Ambrose Paré, the French surgeon, in spite of a life of trials and years of unhealthy camp life, lived to be nearly 75. Harvey's great Dutch contemporary, Leeuwenhoek, the inventor of the compound microscope and the first investigator of microbic life, lived to be 91. Morgagni, whom Virchow called the founder of modern pathology, had nearly completed his eighty-ninth year. Auenbrugger, the inventor of the method of percussion for the investigation of diseases of the chest, reached a similar advanced age. Scarpa, the distinguished Italian anatomist and "inventor"—according to the nonplussed medical student—of the triangle, reached the ripe age of 87.

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[1] The Journal A. M. A., August 23, p. 452, and Bulletin of Johns Hopkins Hospital, July, p. 155.

It is not alone in past centuries, however, that physicians have completed the threescore years and ten that are the days of our years here on earth, yet have lived on to enjoy life in comfort and happiness. The nineteenth century, with all its bustle and rush, did not shorten the usual long life of the investigating physician. Louis, the distinguished French clinician, to whom America owes so much for the training of the great generation of investigating practitioners of the middle of the nineteenth century, in spite of a family sorrow that broke his spirit at 60, lived to be 85. Schoenlein, to whom so many of the present generation of German internists look back as a master, reached the age of 91. Traube, another distinguished German teacher, lived to be nearly 80. Cruveilhier, the great French anatomist and physician, lived to be past 82. Langenbeck, Skoda, Brodie and Cullen were well on their way to their eightieth year when death came. Sir James Paget was over 75. Velpeau, Magendie and Sir Astley Cooper were well beyond their seventieth years. The distinguished physiologist Johann Müller, while occupying the chair of physiology and anatomy at Berlin about the middle of the nineteenth century, gathered around him perhaps the most distinguished band of medical students any teacher has ever had. Many of them were destined to longevity as well as fame. Among them beside Virchow were Du Bois Reymond, the physiologist, who died at 78; Helmholtz, the physicist, who lived to be 76, and Schwann, the founder of the cell doctrine, who died at 72.

Our greatest American physicians and surgeons, in spite of the trials of a new country, the harder struggle for existence and the hardships incident to practice because of the difficulties of traveling, bear very favorable comparison with their distinguished foreign colleagues in the matter of longevity. John Collins Warren, the first professor of anatomy and surgery at Harvard, lived to be 78. Edward Delafield of New York lived beyond fourscore years, while Jacob Bigelow of Boston more than completed fourscore years and ten. John R. Cox, the editor of the first American Dispensatory, reached the ripe age of 91. Dunglison, the well-known medical lexicographer, Alonzo Clark, whom many generations of medical students learned to revere, and Valentine Mott, great teacher and busy consultant, all of them lived to be over 80. So has Nathan S. Davis, the founder of the American Medical Association. Gross, the distinguished surgeon, died at 79, having declared it as his opinion at 75 "that any one who is used to work and gives it up may be considered a dead man." These are but a few of many who lived beyond the psalmist's limit without fulfilling his sad prophecy of subsequent unhappiness.

Nor are all the grand old men of medicine dead. Many of the greatest living physicians are over 70 years of age, most of them in the enjoyment of health and strength, though their lives have been full of faithful application to hard work. It is not as some one has said, that a man must live long to achieve fame, for most of the great physicians made the original observations on which their fame depends while still comparatively young. On the contrary, it seems that the faculty for intense and prolonged devotion to work is the first requisite of a genius, and far from being morbid or unhealthy, is the natural exercise of the superabundant vitality that is in the man. Instead of looking for a shorter-lived generation of medical men then, because of the hurry of twentieth century endeavor, we may expect the race of medical patriarchs to be generously continued, for the investigation spirit is abroad, and physicians generally are rising into that higher plane of calm, original observation that fosters long life.

A UNITED PROFESSION IN NEW YORK.

From a telegram received from our New York correspondent just as we go to press we are led to believe that the long-hoped-for union of the New York profession is soon to be realized. The matter came before the annual meeting of the New York State Medical Association held this week. Our correspondent wires that the joint committee representing the New York State Medical Association and the Medical Society of the State of New York agreed to recommend the adoption of the name of the Medical Society of the State of New York and the present organization of the New York State Medical Association, and to apply to the legislature at its next session for a new charter under this agreement. The New York State Medical Association adopted a resolution to the effect that the committee representing it be continued for the purpose of co-operating with a committee from the Medical Society of the State of New York to secure a charter at the next session of the legislature in 1903 which shall reconstitute the two state organizations into one state body.

PROFESSOR LORENZ AND THE STATE BOARD.

There has been considerable criticism of the action of the Illinois State Board of Health requiring Professor Lorenz, the noted Vienna surgeon, to take out a license to practice. As his practice here was not confined to consultation cases and there was every probability of a large demand for his services after the advertising he has received, the strict compliance with the law on the part of officials oathbound to do their duty seems on the whole commendable rather than otherwise. It is not likely that an American physician would be allowed to do any profitable practicing in Vienna without going through a more than merely formal test of his qualifications, if indeed he would be allowed to do any at all. In this country we are a little too apt to be over-accommodating in such matters and we have hardly been educated yet to the point of seeing the necessity for any medical laws whatever. We do not believe, moreover, that the distinguished surgeon whose case was passed on by the board feels aggrieved because he has been regularly qualified as a practitioner in Illinois. We hope the board will go on with the good work of requiring all who are practicing medicine to conform to the law. There are still more than a few in Chicago and the state, both foreign and native, whose cases call for their attention.

GRAVE ROBBING.

The newspapers have lately been full of gruesome (to use a popular newspaper term) accounts of grave robbing in Indiana. There appear to have been very extensive operations in this line and the public is naturally aroused on the subject. While there is no legal or moral defense for this kind of law-breaking, the fact that Indiana has no laws providing for legalized dissection and provision of dissection material is the real cause of the present state of affairs. Efforts that have been made to get such a law have been defeated, it is said, through the determined opposition of the undertakers, who have thus far exercised a predominent influence with the legislature as regards this matter. Yet the state of Indiana charters a medical college, and if it can get no material from lawful sources it utilizes unlawful ones. The result is necessarily demoralizing; it encourages the existence of a class of criminals who do not discriminate as to what they take or where it goes, and the result is these occasional distressing and generally disturbing revelations. So long as every state must have a medical college it should also pass laws providing it with the necessary material. The medical profession and the sensible portion of the laity ought, in view of what has occurred, to have sufficient influence to secure legislation that will put the ghouls out of business.

A SURGEON'S REMINDER.

The surgeon's position is sometimes not an enviable one, especially when his failures or errors are public property. The recent experience of one of the most brilliant and progressive operators is in point. He was called to a patient who claimed that he had swallowed his false teeth and demanded an operation. The attending physician was positive that he had felt the object before it slipped away from him. The teeth were missing, the pharynx was lacerated as if by a rough body, and, in addition to all other tests, a radiogram was made that apparently showed the foreign body lodged in the lower esophagus. On operation the teeth were not found, but subsequently turned up in the patient's bed. The patient died and the newspapers got hold of the story and made the most of it. It is clear that the patient suffered from a definite delusion, which could hardly have been anticipated or detected, and with this there must have been a hysterical contracture, such as is by no means unknown under such conditions. The surgeon's fault was his too implicit confidence in the radiogram, which it seems must have been made by an unreliable or unskilled operator, and in believing what others told him. The result is an unfortunate and really undeserved temporary publicity in a damaging way. The case suggests how much care should be exercised in surgical diagnosis to avoid mistakes and the impossibility of always avoiding them, even when apparently everything possible has been done. No surgeon should operate on another's diagnosis, unless verified by himself. In this case everything seems to have been misleading. The public and professional faith in the revelations of the *x*-ray is somewhat injured by this occurrence, but it has been long known that it, like even mathematics, may sometimes lead us wrong. It is not surprising that the surgeon in this case considered the case as a proper one for operation. With the facts as given us, most, if not all, of us would have been similarly misled.

PASSAGE OF TUBERCLE BACILLI FROM THE INTESTINE INTO THE CHYLE VESSELS AND THORACIC DUCT.

The great infrequency of primary tuberculosis of the intestines does not harmonize at all well with the views that in a large number of cases tuberculosis is of alimentary origin. It will be recalled that Koch in his London address used this fact as an argument in favor of the harmlessness of milk from tuberculous cows. It would be difficult, however, to explain many cases of tuberculosis of the mesenteric lymph nodes, in which there may be no evident primary intestinal lesion, without assuming that the bacilli had entered from the intestinal lumen. Experiments, too, indicate that tubercle bacilli, as well as other bacteria, may pass through the normal intestinal wall. The most recent experiments are those of Nicolas and Descos,[1] who fed fasting dogs large quantities of tubercle bacilli in soup. Some three hours later the animals were killed and several cubic centimeters of chyle secured for further study at the same time as a thorough examination was made for the presence of existing old tuberculous lesions. They succeeded in perfectly healthy animals thus fed, in demonstrating tubercle bacilli in the chyle in small numbers and stainable with great difficulty; of greater importance perhaps is the fact that three guinea-pigs were rendered tuberculous by injection of chyle from two of these dogs. It is true that injections of similar material from four other dogs fed with tubercle bacilli did not cause tuberculosis in guinea-pigs, but it seems to be clearly shown that three hours after the ingestion of tubercle bacilli the contents of the chycle vessels and the thoracic duct may harbor virulent bacilli in numbers sufficient to cause tuberculosis of guinea-pigs. These experiments (which ought to be repeated by others) are certainly very suggestive of what may be the course of events when, for instance, milk laden with tubercle bacilli is taken into the stomach, and it may well be that tuberculosis of alimentary origin is established in this way without local intestinal lesions.

UNFAIR TESTS.

In a recent number of The Journal there was a criticism of one or two questions offered by the State Examining Board of California. The matter was of slight importance, and was only emphasized as a caution against affording the opponents of medical practice acts an opportunity to attack them; it does not appear from later information that any injustice was done to anyone on account of the questions mentioned. Nevertheless there has been started an active fight against the board on the part of the quacks, including the employment of that frequent resource of exposed frauds, a libel suit. In this case the charge of libel against one of the medical examiners appears especially tenuous and, it seems to us, should prove a boomerang if it is ever carried to trial. There is always likely to be some dissatisfaction when an unduly large proportion of candidates from any particular school fail to pass, and though it indicates defects in the candidates rather than in the examiners, charges are liable to be made. When members of the profession fall out in such a matter it is quickly taken up and made the most of by those outside irregulars to whom all restrictive practice laws are an abomination. As a whole the California state examination was eminently fair and what any well-qualified candidate should have been able to pass. The attack on the law and on the individual members of the board is clearly unjustifiable and unworthy in its motives.

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[1] Journ. de Phys. et Path. gén., 1902, iv, 910-912.

Medical News.

ARKANSAS.

Personal.—Dr. J. C. Minor has returned to the United States after three years service in the Philippine Islands and will open an office in Hot Springs, about December 1.——Dr. Harry C. Stinson, Dermott, has been elected superintendent of the Arkansas State Lunatic Asylum, vice Dr. Philo O. Hooper, deceased.——The firm of Drs. Holland, Jelks and Bernart have succeeded to the practice of Drs. Jelks and Holland, Little Rock.

ILLINOIS.

Home for Feeble-Minded Children.—The Beverly Farm, Home and School for Feeble-Minded Children, Godfrey, has recently enlarged its equipment at an expense of $6000, introducing a kindergarten school and an exclusive boys' cottage.

Chicago.

Crusade on "Fake Medicine Concerns."—A detail of detectives has commenced a crusade against fraudulent medicine concerns, and, on October 17, raided a building at 1545 Michigan avenue and confiscated a large quantity of literature of the "Chicago Cure Company."

Installation Clinics.—As a part of the special exercises connected with the installation of President James of Northwestern University, Professors Lorenz of Vienna, Robert T. Morris of New York City, and Norman Bridge of Pasadena, Cal., gave clinics at Mercy Hospital, October 22, from 9 a. m. to 1 p. m. Professor Morris also read a paper on "Peritoneal Adhesions" before the Chicago Medical Society on the same evening.

Mortality of the Week.—The 445 deaths reported during the week ended October 18 represent an annual mortality of 12.73 per 1000, or an increase of more than 10 per cent. over the rate of the previous week, when there were 42 fewer deaths reported. The principal causes of the increase and the numbers in excess were: Pneumonia, 22; nervous diseases, 13; apoplexy and heart disease, 12; diphtheria and violence, 8 each. Aside from diphtheria, the causes are those with which sanitary administration can do little.

Presbyterian Hospital Must Secure Nurses.—The Illinois Training School for Nurses will terminate its connection with the Presbyterian Hospital at the expiration of its present contract, Nov. 1, 1903. In their communication to the executive board of the hospital the managers of the school say:

> At the expiration of our last contract, Oct. 1, 1901, it was with considerable reluctance that we entered into another, as we had found it impossible the preceding year to furnish the requisite number of nurses without calling in graduates, thus not only increasing our expenses, but reducing our income from special nursing. We had hoped that this demand would lessen and that we might continue to serve you another three years, but this we now find impossible.
>
> In closing our connection with the Presbyterian Hospital, we do it with sincere regret and with the most cordial feelings toward the trustees and all those connected with its management.

Below-Grade Milk.—Notwithstanding the good pasturage an increased proportion of samples of milk below grade have been found by the milk inspectors; but this is largely due to the fact that their labors have been directed to the poorer districts. The department has resumed the publication of the names and addresses of dealers who sell "skimmed milk" as "whole milk," and it rests with consumers to punish these by refusing to further patronize them. The dirty milkman is even more dangerous than the dishonest one, and the war against dealers whose facilities and depots indicate that they can not handle milk properly will be waged with more severity than heretofore. During the week several samples of milk have been found adulterated with formalin—for which there is even less excuse than in hot weather. Suits have been begun against these offenders and will be pushed rigorously.

INDIANA.

Indiana Medical College.—The following lecturers have been added to the teaching force: Dr. Albert A. Kimberlin, physical diagnosis; Dr. Hugh M. Lash, nervous diseases; Dr. John J. Kyle, nose and throat diseases, and Dr. Charles A. Pfafflin, histology.

Suit Withdrawn.—Dr. James N. McCoy has dismissed his damage suit against Dr. Norman E. Beckes, both of Vincennes, for $5000, without prejudice. The original suit was for $5000 for malicious prosecution on account of alleged violation of quarantine, and the defendant filed a demurrer to the complaint on the grounds that the law in malicious prosecution makes it necessary to charge a crime to found a suit.

Wants Rules Made Law.—The State Board of Health has decided to ask the next legislature to enact the rules of the board into law, and to enact a state laboratory law to make enforcement of pure food measures possible. The rules of the board have the effect of law, according to the Supreme Court, but it often happens that justices of the peace and other judicial officers, not seeing them in the statutes, and not knowing of the Supreme Court's decisions, refuse to enforce them.

Prevalent Diseases.—Smallpox for the twentieth consecutive month was the most prevalent disease. There were 219 cases reported from 39 counties with 3 deaths. In the corresponding month last year there were 80 cases reported, with no deaths. Next to smallpox, typhoid fever was the most prevalent disease during the month, and the same order prevailed in the preceding month. All diseases of the respiratory tract increased in area of prevalence, while the diseases of the intestinal tract decreased in area of prevalence.

Mortality of Indiana.—The monthly reports to the Indiana State Board of Health show that the total number of deaths for September was 2312. This is a death-rate of 13.6 per 1000 per annum, and is exactly the same rate as for the corresponding month last year. The number of deaths under 1 year of age was 536, or 20 per cent. of the total number; between one and five years 288, or 10.7 per cent. of the total number; between 5 and 10 years 71, or 2.6 per cent. of the total number; between 10 and 15 years 62, or 2.3 per cent. of the total, and 65 and over 613, or 22.9 per cent. of the total number. From important causes of death the number of deaths was as follows: Pulmonary tuberculosis, 282; other forms of tuberculosis, 51; typhoid fever, 232; diphtheria, 34; scarlet fever, 7; whooping-cough, 16; pneumonia, 112; diarrheal diseases under 5 years of age, 322; cerebrospinal meningitis, 24; influenza, 6; puerperal septicemia, 17; cancer, 114; violence, 105; smallpox, 3. In comparing these figures with those of the same month last year, there is an increase in the rate for consumption of 8.8 per 100,000, for typhoid fever of 21.6, and for pneumonia of 18.9.

Alleged Grave Robberies.—The cases referred to in The Journal two weeks ago are now before the grand jury. All the accused, with one exception, are negroes. The exception is the demonstrator of anatomy in the Central College of Physicians and Surgeons, who is under bonds. The negroes claim that the demonstrator located bodies in cemeteries, went on the bond of an accomplice when caught, and also pledged himself to pay for certain shotguns bought by the negro grave-robbers. The partially dissected bodies found buried in the basement of the Indiana Medical College were proved to have been relics of the fire which consumed the buildings in 1898, and to have been legally secured. The law in Indiana has been construed by the attorney-general as a device to prevent medical colleges from getting bodies, rather than assisting them. A new law is to be proposed, by the provisions of which the state may furnish medical colleges the cadavers needed for the proper instruction of medical students in anatomy. The measure will be modeled somewhat after the law in force in the District of Columbia, and will provide for a state board of anatomy. Every medical college in the state will be represented on it. Unclaimed bodies of paupers dying in public institutions will be reported to this board. Equitable distribution, according to number of students, will be made of these corpses among the colleges. After all have been supplied with a full quota the bodies shall be buried at county expense, as is now the method.

IOWA.

Ellsworth Hospital Opened.—The new hospital at Iowa Falls, erected by the efforts and munificence of E. S. Ellsworth, at a cost of about $20,000, has been opened.

Leprosy in Iowa.—Secretary Kennedy of the State Board of Health has been asked for information as to what shall be done with two cases of leprosy reported in the state, one a young Norwegian woman living near Humboldt, and the other a man at Gilmore City.

New Members of Mercy Hospital Staff.—The staff of Mercy Hospital, Davenport, has been increased by the appointment of Dr. Carl Matthey, consulting staff; Drs. George W. Banning and Karl Vollmer, laryngologists and rhinologists, and Drs. Oliver W. Kulp, Frank N. Stiles, John D. Cantwell, Ono P. Sala, Frederick Boes, Oscar A. Dahms, George E. Decker, George M. Middleton, Daniel J. McCarthy, Alfred B. Hender, and William Speers, attending staff.

KENTUCKY.

Coal Company Hospital.—A large hospital has been erected near Middlesboro by the Stonega Coal and Coke Company, to care for the sick and injured men who may be hurt while in the employ of the company.

Hospital Staff Reorganized.—The staff of Speers Memorial Hospital, Dayton, has recently been reorganized, with Dr. Charles B. Schoolfield, Dayton, president, and Dr. George J. Herman, Newport, secretary. Several new men have been added to the staff. The hospital has been in financial straits for the past few years, and has now taken on new vigor. Dr. George Buttemiller has been appointed interne to the hospital.

MARYLAND.

Personal.—Dr. Charles H. Ohr, Cumberland, celebrated his ninety-second birthday, October 19. He has had an eventful life and has filled many offices. He was educated at the Gettysburg College; graduated in medicine from the University of Maryland in 1834; settled in Cumberland in 1847, and was grand master of masons of the state, 1849-1851; served several terms in city council, was mayor of Cumberland, state senator, assistant surgeon U. S. Army during the Civil war; president of the Allegheny Fire Insurance Company and president of the Medical and Chirurgical Faculty of Maryland. He retired from practice several years ago.——Dr. W. H. Ravenscroft, Oakland, will spend the winter in Denver.

Baltimore.

Typhoid Fever and Mortality.—There were 5 deaths and 40 new cases reported last week. The total mortality was 154, which is said to be the lowest death rate for years.

Endowment of Medical School.—The faculty of the University of Maryland has appropriated $1000 to the permanent endowment fund of the medical school annually for five years.

Personals.—Dr. S. Griffith Davis has been elected professor of anatomy, clinical and operative surgery in the Woman's Medical College.——Dr. Henry Barton Jacobs has returned from Europe and is at his villa at Newport.——Dr. A. Leo Franklin has been appointed resident surgeon in the gynecologic department at the University of Maryland Hospital.——Dr. Frank Martin has returned from Europe.——Dr. J. B. Crenshaw sailed for Bremen, October 18.——Dr. William A. Moale has returned after an extended trip abroad.——Dr. H. H. Johnson has been recently appointed medical officer of the U. S. coast survey steamer *Blake*.——Dr. Ralph Duffy, of the Johns Hopkins Hospital, has been appointed to a position on the staff of the West Penn Hospital, Pittsburg.

MICHIGAN.

Comparative Prevalence of Disease.—For September, compared with the average for September in the 10 previous years, pneumonia, measles and smallpox were more than usually prevalent; and consumption, cholera morbus, cholera infantum, dysentery, intermittent fever, remittent fever and erysipelas were less than usually prevalent. The unusually cold and wet weather has apparently increased the rheumatism and decreased the prevalence of diarrhea.

University Medical Department Opens.—The fifty-third year of the medical department of the University of Michigan, Ann Arbor, began, September 23, with an address by Dr. Frederick G. Novy. The new medical building is not yet completed, but is promised to be ready next month. Dr. Willis succeeds Dr. Guy L. Noyes in the chair of ophthalmology; Dr. Charles W. Edmunds becomes superintendent of the hospital, vice Dr. Clarence A. Good, and Dr. Joshua G. R. Mainwaring has been appointed house physician in place of Dr. Henry W. Clouchek. The enrolment has been very satisfactory.

Most Dangerous Communicable Diseases.—Meningitis was reported during September at 7 places; whooping cough at 32 places; smallpox at 39 places; measles at 45 places; diphtheria at 52 places; scarlet fever at 103 places; typhoid fever at 169 places, and consumption at 231 places. Reports from all sources show meningitis reported at 6 places less; whooping cough at 7 places less; smallpox at 11 places less; measles at 11 places less; diphtheria at 11 places more; scarlet fever at 11 places more; typhoid fever at 21 places more, and consumption at 4 places more, in September, than in the preceding month.

State Board of Health.—At the regular meeting, held at Lansing, October 10, Dr. Victor C. Vaughan was requested to prepare leaflets on rabies and its prevention and tetanus and its prevention, to be promulgated by the board. A leaflet was also ordered to be prepared on the resuscitation of the apparently drowned. It was decided to hold a conference of local health officials in Ann Arbor. Delegates were appointed to the conference of state and provincial boards of health and to the American Public Health Association. The secretary presented elaborate statistics relating to cancer, compiled in the state department under the direction of Dr. Wilbur, chief of vital statistics division, exhibiting the ratio of deaths in Michigan from cancer to population in each period of age, showing that the ratio has increased at all periods of age above that of thirty years. Dr. Wilbur was tendered a vote of thanks for the work, and was requested to have it published.

September Mortality of Michigan.—There were 2548 deaths returned to the Department of State during September, corresponding to a death-rate of 12.6 per 1000 per annum. This rate is slightly higher than the rate for the preceding month—11.8—but is lower than the rate for September, 1901, which was 14.1. There were 607 deaths of infants under 1 year, 219 deaths of children aged from 1 to 4 years, inclusive, and 662 deaths of individuals over 65 years of age. Important causes of death were as follows: Tuberculosis of lungs, 162; other forms of tuberculosis, 26; typhoid fever, 80; diphtheria and croup, 48; scarlet fever, 17; measles, 4; whooping cough, 24; pneumonia, 119; diarrheal diseases, under 2 years, 329; cancer, 114; accidents and violence, 152. Typhoid fever nearly doubled in mortality as compared with the preceding month, and diphtheria and pneumonia showed considerable amounts of increase. No deaths were reported from smallpox, the first month in which this has been the case since April, 1901.

Detroit.

Personal.—Dr. Burt R. Shurly, who has been abroad three months, has returned to Detroit.

Michigan College of Medicine and Surgery commenced its fall term, October 1, with an enrolment of one hundred students. Dr. Edgar B. Smith delivered the opening address.

Health Officer's Recommendations.—In his annual report, Health Officer Dr. Guy L. Kiefer makes a plea for a hospital for communicable diseases, and also urges the value of medical inspection of schools.

Detroit's Deaths.—The twenty-first annual report of the Board of Health shows that during the fiscal year 4451 deaths occurred, a death-rate of 14.60 per 1000. Diphtheria caused 48 deaths; scarlet fever 73, and smallpox 4.

Fined for Illegal Practice.—A. H. Wesley, who was arrested at Orion for illegally practicing medicine, was found guilty, October 10, and fined $50. He paid the fine rather than accept the alternative of serving sixty-five days in the county jail.

Prohibits Drug Distribution.—The Detroit Board of Health has issued an order "That no person or persons shall gratuitously distribute, or cause to be distributed, on doorsteps, in hallways or on the premises attached to any house in the city of Detroit, any medicine, drug or remedy containing a drug of any kind whatsoever, whether it be in liquid, tablet, capsule or pill form."

Adventures of Michigan Physicians.—To stimulate the imagination or the narrative faculty of the Michigan physician the Detroit *News-Tribune* offers each week the sum of $5 for an account, not to exceed 500 words, of the most remarkable incident which has occurred to a Michigan doctor or surgeon. The incident must have happened in the writer's own experience, and in connection with his own practice. The name of the writer is not required for publication, unless he be willing, but simply for an evidence of good faith.

MISSOURI.

Addition to Hospital.—The contract for the 30-room addition to St. Joseph's Hospital, St. Joseph, has been let. The new building is expected to cost about $30,000, and is intended to accommodate private patients.

Accidents.—Dr. Thomas King, St. Joseph, was thrown from his buggy, October 13, fracturing his right arm above the elbow. ——Dr. U. B. Wingfield, Shackelford, was thrown from his buggy, October 11, breaking his left arm above the wrist and the right leg above the ankle.

Personal.—Dr. Luther P. Walbridge, St. Louis, has been appointed assistant physician under Dr. Leonidas H. Laidley, medical director of the Louisiana Purchase Exposition.——Dr. William L. Whittington, late major and surgeon U. S. Volunteers, formerly of St. Joseph, has been appointed to the medical staff of the State Hospital for the Insane, St. Joseph, vice Dr. John T. Field, deceased.

NEW YORK.

The Medical College of Syracuse University opened for registration, October 7. The faculty anticipates that there will be about 135 students in attendance.

Hospital Appointments.—Dr. Mary H. Smith, Rochester, has been appointed junior assistant physician, and Dr. Nisban A. Pashayan of the St. Lawrence State Hospital, junior physician at the Long Island State Hospital.

Dysentery as a Reported Cause of Death.—During August there was reported to be an extensive epidemic of dysentery in towns in Westchester County. This has been investigated by bacteriologists connected with the State Department Laboratory, and will be reported on later. Very likely in not a few of the cases the disease was rightly named. Epidemic dysentery is of rare occurrence in this state. Sporadic cases occur and deaths from this cause are usually reported during the summer months. During August there were 125 deaths reported as from dysentery, outside of New York City. There is no doubt that the term dysentery is very loosely used as a cause of death.

Report on Criminal Insane.—During the year ended September 30, 14 convicts, whose sentence had expired, but who still were insane, were transferred from Matteawan to other state institutions. On Oct. 1, 1901, there were 752 patients, and 59 were admitted during the year. During 1901 there were 206 discharges or transfers, reducing the number of inmates to 605. One man who escaped was captured. There were 18 deaths at the hospital in the course of the year, and 19 patients recovered their reason. The ratio of recoveries, based on the average daily population, is nearly 3 per cent. Recovery among criminal insane, especially court cases, is extremely small. Those criminals adjudged insane are compelled to endure a longer confinement than the average term in penal institutions.

Smallpox.—There were 10 deaths from smallpox in August, of which 6 were in New York City. In July there were 34 deaths, and prior to that there have been from 50 to 70 deaths monthly since last November. During July there were 285 cases of smallpox in the state in 14 localities, including New York City; in August there were 134 cases, and during September, up to the 25th, there have been reported but 45 new cases, of which 17 are outside New York City. During the summer the chief points of prevalence were Rochester, Corning, Walton, Albany and Stockport. With possible recurrence during the approaching lumbering season in the Adirondacks of the epidemics of last winter, the boards of health of all towns in which there are lumber camps are again directed and urged to enforce the requirement, under an exacted penalty, that no men be employed in them who have not been satisfactorily vaccinated. There is a general influx about this time of the year of wood choppers from outside, especially from Canada, and often from infected localities.

New College Requirements.—The secretary of the Regents of the University of the State of New York has sent out a notice to the deans of medical schools, stating the requirements for the allowance of one year in the medical course to graduates of colleges and universities. The college work, which will be recognized as entitling the holder of a baccalaureate degree to an allowance of one year, must include either the studies of the first medical year or work in general biology, physics, chemistry. Latin and French or German. The statement is made necessary by the recent law of this state, permitting graduates of colleges to finish the medical course in three years, and intrusting the interpretation of this provision to the regents. In a communication from the secretary of Cornell University Medical College, he announces that that institution was the first in the state to advance the requirements for admission in accordance with the standard of the regents, and that although the requirements were rigidly enforced, the class just entered numbered 121 as against 181 last year, demonstrating that a very satisfactory proportion of the men who wish to study medicine can obtain an education outside of the medical colleges in the natural sciences sufficient to enable them to go on with the more specialized subjects taught in the medical colleges.

Combination of State Association and State Society.—At a joint conference, held on Monday last, by the committees representing the New York State Medical Association and the Medical Society of the State of New York, it was agreed to recommend that the name of the state society and the present organization of the state association be retained and that application be made to the legislature for a new charter. The association unanimously adopted the following resolution: "That the committee be hereby continued for the purpose of co-operating with a committee from the Medical Society of the State of New York to secure a charter from the legislature at its next session, 1903, which charter shall reconstitute the two state organizations into one state body. But if the Medical Society of the State of New York shall fail to approve such plan of union by a charter to be secured at the approaching session of the legislature in 1903, then this committee shall be considered as discharged and the proposition of this association withdrawn." The state association also recommended the New York County Medical Association's present plan of medical defense. Dr. Frederick Holme Wiggin of New York was elected president, and Dr. W. H. Thornton of Buffalo vice president.

New York City.

Thousands for Hospital.—The Board of Estimate has appropriated $220,000 for the Harlem Hospital.

Smallpox at Quarantine.—One of the steamers of the Hamburg-American line is detained at quarantine because of smallpox developing among the steerage passengers.

Illegal Practitioner Fined.—James C. Magnus, doing business in West Twenty-eighth Street, was convicted of practicing medicine without a license. The penalty is $250 fine or a year's imprisonment, or both.

Carnegie Laboratory Changes Ownership.—The New York University took title yesterday from the Bellevue Hospital Medical College to the five-story Carnegie laboratory. The consideraton was nominal.

Additions to Columbia's Faculty.—Dr. L. Emmet Holt has been appointed professor of diseases of children, Dr. Walter B. James, professor of the practice of medicine, and William J. Giles, M.S., adjunct professor of physiologic chemistry.

New Hospital for Deaf Mutes.—Plans have been prepared for a new hospital in connection with the New York Institution for the Instruction of the Deaf and Dumb. The new hospital, which is to be erected on the grounds at Lafayette Boulevard and 165th Street, is to be a three-story structure, and is expected to cost $100,000.

Personal.—Dr. W. W. Van Valzah has resumed professional work at 10 West Forty-third Street, after an illness of four years.——Dr. David D. Jennings has been appointed police surgeon, vice Dr. Joseph H. O'Connell, retired.——Dr. William H. Bates, who disappeared from this city, August 30, was found a few days ago at Charing Cross Hospital, London.

Trachoma in the Schools.—According to Health Commissioner Lederle the medical inspectors have found 18 per cent. of the public school children examined suffering from trachoma. So far, 988 pupils have been excluded because of the condition of the eyes, 814 of these being in the grammar schools. The mayor has been asked for an appropriation of $21,000 to carry on the work of inspection.

Buffalo.

Typhoid Fever in Suburb.—There are many cases of typhoid fever at West Seneca, a suburb of Buffalo. Within a distance of a quarter of a mile there are 8 cases. The outbreak is due to the use of well water. There is a good water supply there now, water coming from the mains of the Depew Water

Company. The water is obtained from an intake pipe built about a mile outside the shore in Lake Erie.

Health for September.—The monthly report of the Department of Health for September shows a mortality of 410, equivalent to an annual death rate of 13.20 per 1000. Of this number 93 deaths were from communicable diseases. The principal number of deaths occurred as follows: Pulmonary consumption, 29; cholera infantum, 29; typhoid fever, 17; debility, 37; cancer, 12; apoplexy, 16; meningitis, 17; valvular disease of the heart, 27; pneumonia, 20; gastro-enteritis, 17; nephritis, 19, and violence, 21.

Personal.—Dr. Norman L. Burnham was elected secretary to the medical section of the Academy of Medicine.——A dinner was given in honor of Dr. George Dock of Ann Arbor by Dr. Charles G. Stockton, at the Saturn Club.——Dr. Floristan Aguilar of Madrid, a dentist of international fame, was the guest of Dr. William C. Barrett, dean of the dental department of University of Buffalo.——Dr. Charles Cary is in the North Woods.——Dr. Regina Flood Keyes was appointed obstetrician to the Erie County Hospital, vice Dr. Earl P. Lothrop, resigned.

GENERAL.

Manila Lepers Escape.—Nineteen lepers escaped from the San Lazaro Hospital, September 3, through the carelessness of the guards. It is said that there are many other lepers at large in Manila, who are as yet undetected because the disease is not far advanced. As it progresses, they will doubtless be discovered and segregated.

More Surgeons for the Navy.—Surgeon-General Rixey's annual report of the Navy states that the medical force is inadequate. Whereas since the Spanish war the medical corps increased only 15 per cent. in numbers, the naval strength increased 70 per cent., and the examination for re-enlistment 102 per cent. He submits a recommendation for the appointment of 150 more medical officers. He also recommends the establishment of a woman's nurse corps, numbering 50, to be increased as need arises. The report shows that the health of the Navy and Marine Corps was good throughout the past fiscal year, the percentage of sick and the death rate being lower than for several years.

Egyptian Medical Congress Representative.—Major William C. Gorgas, surgeon, U. S. A., has been designated by Surgeon-General O'Reilly to represent the United States Army at the first Egyptian Medical Congress, which will meet in Cairo, December 16. The purpose of the congress is to collect data in regard to tropical diseases and discuss means for eradicating them. Major Gorgas is an expert on tropical diseases. He was stationed at Havana during the greater part of the American occupation of Cuba, and made a special study of yellow fever. It was through his efforts that the disease was practically eradicated in Cuba. The great cholera epidemic in Egypt this summer was the main reason for the calling of the congress.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about $180, will be made on July 14, 1903, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be on any subject in medicine, but can not have been published, and must be received by the secretary of the college on or before May 1, 1903. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned on application within three months after the award. The Alvarenga prize for 1902 was not awarded, the committee having decided that no essay of sufficiently high standard was submitted in competition.

CANADA.

Personal.—Dr. James Anderson, Hamilton, Ont., is taking a special course in children's diseases in New York, and will shortly proceed to London, England, where he will continue these studies.——Dr. H. W. Thomas, Montreal, has been appointed a fellow in pathology at the Medical Faculty of McGill University. For the past three years he has been in Germany, where he was pursuing a course in comparative pathology.——Dr. W. M. Ford of McGill, Rockefeller fellow of pathology, has been appointed to the staff of the Rockefeller Institute at Chicago.——Dr. Charles O'Reilly has returned to Toronto, after attending the annual meeting of the medical superintendents of the hospitals of the United States and Canada. Dr. O'Reilly is the superintendent of the Toronto General Hospital, and was elected to the position of vice president of the association.——Dr. and Mrs. Arthur A. Small, Toronto, have returned to Chicago to reside permanently.

Manitoba Medical Council Meets.—At the annual meeting of the council of the College of Physicians and Surgeons of Manitoba, held in Winnipeg, October 8, the following officers were elected: President, Dr. George Riddell, Crystal City; vice-president, Dr. A. J. Macdonell; treasurer, Dr. James Patterson, Winnipeg; and registrar, Dr. J. S. Gray, Winnipeg. It was decided to appropriate $1200 to improve and increase the library, which is being maintained in the interests of all licensed medical men in the province. The library is now well stocked with all the latest medical publications, and any medical man is privileged to use any of these books.

Toronto Free Consumption Hospital.—In connection with this institution a petition is now being circulated asking the City Council to submit to the electors at the coming municipal elections a by-law to provide for the raising of funds for the immediate commencement of the work of erecting the new buildings. One well-known citizen of Toronto has offered to contribute $25,000 toward the new institution. The National Sanitarium Association is at present making an urgent appeal for funds to enable it to carry on the work at the new hospital at Gravenhurst. There are now 150 patients at the two hospitals at Gravenhurst. On Thanksgiving (October 16) a dinner was organized by the two medical superintendents, Drs. J. H. Elliott and C. D. Parfitt, and a very pleasant day was spent throughout.

Judicial Decision re Nurses' Fees.—A nurse had been engaged for an expected confinement, and told to hold herself in readiness on and after a certain date. This she did, and one week after that date was called to attend the patient. Payment for her services for that week was refused, hence the suit in court. The question for decision was: Should a nurse, when engaged for a fixed date be paid for the time of waiting after that date, as well as for the time of service? The affirmative decision has given general satisfaction to the nurses and physicians in Toronto.

FOREIGN.

Retirement of Professor Neumann.—As Professor I. Neumann of Vienna has reached the academic age limit, he will retire with the current year from the chair of cutaneous affections. His successor has already been appointed, Prof. F. Mracek.

Prizes for Miners' Phthisis Remedy.—A cable from Johannesburg announces that the Chamber of Mines offers prizes of $2500, $1250 and $500 for the three best practical suggestions of how to combat miners' phthisis. This disease is caused by the dust from the drilling.

The German Medical Press Association held its annual meeting at Carlsbad, in October, and steps were taken to incorporate the association in the newly-formed international press association. The committee in charge of the matter includes Eulenburg, Posner, Spatz, Adler and Herrnheiser, representing the great weeklies.

Memorial Scholarships in Russia.—Contributions are being received at Moscow to found a series of scholarships as a memorial to the late specialist in children's diseases, Professor Filatoff. The first one has already been established. The St. Petersburg Institute for Experimental Medicine is also collecting a fund as a memorial to its recently deceased member, Prof. M. W. Nencki.

Attendance at the St. Petersburg Woman's Medical College.—There are 112 candidates for the degree of M.D., graduates of this institution. The total attendance is 1412 and the applications have been so numerous that the faculty was able to select from the "gold medal" high school graduates almost the entire body of students. Exceptions were made only in favor of those women who had already waited three to five years for admittance to the college.

The Plague at Odessa.—The city of Odessa in Russia has expended 67,000 roubles in fighting the plague, and its citizens have spent nearly half a million, while commerce, manufactures and trades have suffered great loss. The city has consequently appealed to the national government for aid, as it has reached the limit of possible expenditure in this line. Nearly $2000 was spent on the extermination of rats. There have been 35 cases of the plague, in all, with 13 deaths to September 16.

Cholera in Palestine and Egypt.—The epidemic of cholera is spreading rapidly in Palestine. The city which has suffered the most thus far is Gaza, where there have been thirty to forty deaths daily. In Egypt the disease is now well under control. Hubbard T. Smith, the acting consul-general of the United States at Cairo, telegraphed the State Department, October 11, that since October 4 there had been in all Egypt 971 new cases of cholera and that 916 persons have died of the disease.

Suicides in France, 1880-1900.—According to the statistics recently published in the *Sem. Méd.* the annual average of suicides in France from 1896 to 1900 was 23 to 100,000 inhabitants. This includes 37 men to 11 women to 100,000, an average of 7069 men and 2017 women for each of the four years. The proportion of the unmarried was 33, of the married 25, and of widowers or widows 62. The liberal professions and official positions furnished 138 and the laboring classes 25 per 100,000. The suicides attributed to insanity were twenty years ago one-third of the total number, but during the four years mentioned were only a sixth. In the nineteen years previous to 1899, the proportion was constantly progressive from 19 to 25 suicides per 100,000, but in 1900 it was only 22. The proportion of suicides in the cities was 27 to 18 per 100,000 in the country.

LONDON LETTER.

Decrease in the Population of Ireland.

The report of the Census Commissioners relating to Ireland shows that the population in 1901, including the members of the naval and military service in the country, was 4,458,775—2,200,400 males and 2,258,735 females; in 1891 it was 4,704,750—2,218,953 males and 2,385,796 females. There was, therefore, in the ten years a decrease of 245,975 persons, or 5.23 per cent. The only county in which an increase of population took place was Dublin, with 6.3 per cent. There is a marked diminution, amounting to 12.2 per cent., in the number of children and young persons under 20 years of age in 1901, as compared with 1891. The emigrants from Ireland numbered during the last decade 430,993—200,125 males and 230,868 females; in the previous decade the emigrants amounted to 768,105. The total for the past fifty years is 3,846,395 and 71.5 per cent. were between the ages of 20 and 45; 89 per cent. of the total go to America, and 6 per cent. to Great Britain.

Mosquitoes and Malaria at Ismailia.

Major Ronald Ross has completed his investigations into the causes of the prevalence of malaria at Ismailia. Unlike Lagos and Freetown, where, owing to the deluge of rain, mosquitoes find innumerable pools for their larvæ, Ismailia is situated in the midst of a desert, where a burning, dry wind shifts the sand from hillock to hillock, and covers everything with dust. How, then, if malaria is really carried by mosquitoes, can the presence of the disease be accounted for in such a place as Ismailia? The question has been answered by Drs. Dampeiron and Pressat, the physicians of the Suez Canal Company, who not only have found anopheles in infected houses in the town, but also discovered their breeding places. The subsoil water in the desert round Ismailia is so near the surface that it actually produces a little vegetation, and even something like miniature marshes are said to rise and fall with the fluctuations of the distant Nile. In most places the water is too brackish for vegetation or mosquitoes, but in a few it is fresher, and in two such close to Ismailia, and only a few hundred meters from the houses, the larvæ of the malaria-bearing anopheles were easily found. Small as the marshes are they have produced a sick rate of about 1000 cases of malaria fever a year. Ismailia itself is copiously irrigated by the fresh water canal. Major Ross, therefore, expected to find anopheles at Ismailia in the irrigation channels, but this fear proved to be unfounded. The deeper permanent channels contain swarms of fish, which render them uninhabitable for mosquito larvæ, while in the smaller channels the water is at once absorbed by the thirsty sand. Major Ross thinks that the task of exterminating the anopheles will be both easy and cheap. It is only necessary to fill up the two small marshes or to deepen them so as to admit fish. As a preliminary, on September 24, Dr. Pressat, Sir W. MacGregor and Major Ross commenced the work by having the pools treated with oil by the newly-formed "Mosquito brigade." The officials of the company will zealously continue the work, and Major Ross is confident that the town will shortly be rid of the malaria pest. Both Port Said and Ismailia have many mosquitoes of the ordinary kinds, which cause great annoyance. It has been ascertained that they breed in swamps in the subterranean cisterns provided for the drainage of the houses. Special men are to be employed to destroy the larvæ every week with oil. Malaria has also existed at the company's water works at Suez. There, again, anopheles were found in some very small puddles in a little marsh close to the water works.

Ice Cream Poisoning in London.

A report of some cases of ice cream poisoning which occurred in London recently has been issued by Dr. Collingridge, M.O.H. Eighteen boys in the telegraph department of the General Postoffice became ill in July after consuming ice cream. The symptoms were colicky pains, headache, nausea, nervous depression, and in some cases vomiting and diarrhea. Samples of ice cream purchased at the shops were submitted to Dr. Klein, F.R.S., for bacteriologic examination. Out of the 24 samples Dr. Klein reported that 13 were poisonous, as tested by inoculation of guinea-pigs. Many of the ice creams contained comparatively few organisms, and of a harmless nature. Others contained enormous numbers. Among the organisms isolated by Dr. Klein were *Bacillus mesentericus*, *Bacillus coli*, a virulent variety of *Bacillus lactis aerogenes*, some members of the proteus group of organisms, and an anaërobic bacillus unnamed. The majority of the specific pathogenic bacilli discovered in several of the samples were of a non-sporing variety, and therefore if originally present in the materials of the ice cream would have been destroyed by boiling which takes place as a part of the manufacture. Therefore it is assumed that these organisms gained access to the material while it was cooling. The subsequent freezing, while it might inhibit its growth, would certainly not destroy such a bacillus, and on ingestion and melting its growth and development would again commence. Out of the 13 samples containing organisms having an injurious effect, twelve were prepared in unsanitary premises. The majority of the manufacturers are aliens. Dr. Collingridge recommends that the condition of the premises where ice creams are prepared must be controlled and that the manufacture of the substance must be insured in such a way as to prevent contamination. This can now be done under the new legislation which gives authority to insist that freezing shall be carried out immediately after the mixture is boiled, and thus the period available for contamination shortened.

The London Hospital and Sir Frederick Treves.

The 118th session of the London Hospital Medical College has been opened by the usual old students' dinner. The chairman, Mr. E. Hurry Fenwick, in proposing the toast of the hospital, spoke of the great improvements that had lately been carried out and of the high honors that had fallen to the hospital during the past year, particularly the distinction conferred on Sir Frederick Treves, who had rendered enormous services to the king and the country. Sir Frederick Treves, in acknowledging the way in which his health had been drunk, stated that great as had been the praise bestowed on him and high as were the honors that it had pleased the king to confer on him, he owed everything to his training at the London Hospital. He rejoiced extremely that the honors brought to the London Hospital were by no means limited to himself, for the anesthetist who assisted him was the anesthetist at the London Hospital, and the nurses who carried out his directions were London Hospital nurses. The Hon. Sydney Holland (chairman of the hospital) in replying for the hospital, said that everything had been done to bring the hospital and college up to date, and they were determined to maintain them in the highest state of efficiency. Enormous strides had been made in the last few years. The isolation block was now completed at a cost of $150,000, which had been given by a friend of Sir Frederick Treves; the postmortem department, with the pathological institute attached, built at a cost of $100,000; the new operating theaters, built at a cost of $565,000; new children's wards and sterilizing department; a new out-patient department, which would be opened in two weeks, erected at a cost of $350,000, and a new convalescent home, built at a cost of $60,000.

Lavage in Vomiting of Pregnancy.—There is one disorder in particular, in which I have found drug treatment very unsatisfactory. I refer to the pernicious vomiting of pregnancy. Here lavage is our best remedy. The exact explanation of its action here I can not give, as the vomiting does not always seem to depend on the contents of the stomach. It is possible that the stomach washing has some helpful effect on the reflex nervous mechanism.—Hedback, in *St. Paul Medical Journal.*

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

REQUIREMENTS FOR MEDICAL PRACTICE.

Knoxville, Tenn., Sept. 20, 1902.

To the Editor:—Will you kindly give me through these columns the legal requirements for practicing medicine in Arizona, Colorado, Mexico and British Columbia? J. P. W.

Ans.—In Arizona an examination and satisfactory diploma are required. In Colorado a diploma approved by the State Board of Medical Examiners. In Mexico a rigid examination in the Spanish language and elaborate identifications of the individual and his medical credentials. In British Columbia an approved diploma, identification and a satisfactory examination.

SUPPRESSION OF URINE.

Paris, Ill., Oct. 20, 1902.

To the Editor:—In the fall of 1880 Mrs. S. had complete suppression of urine. After trying diuretics for more than a week, we prescribed a glass of water every two hours, and in less than twenty-four hours her kidneys began to act. In case the stomach would not retain water, I would give a salt solution either by enema or hypodermically. Is it not possible that in Dr. Seller's case (The Journal, October 11, p. 915) the sweating, vomiting and purging had something to do with the suppression?

W. H. Ten Broeck.

Correspondence.

Organization.

Wickliffe, Ohio, Oct. 13, 1902.

Your article on the chaotic condition of the medical profession as regards its power and influence with the public because of its lack of organization and unity is very timely and to the point. It is to be regretted that the medical profession with all its boasted learning and conceit does not command any power political or civil, compared to organized labor to-day. The profession is not so numerous but that if it were so thoroughly organized as labor, and its individual members more governed by the single-mindedness and good sense of which it boasts, it could wield a tremendous power in politics and could command any reasonable compensation it demanded for services rendered to the state, corporations or individuals. Members of the profession of theology and law far outstrip us today in the respect and power they command in state and civil affairs.

If this were not so we would not have the hordes of competent physicians all over the country that we have to-day struggling with poverty and coming to old age without a competence, hardly able to earn enough to live decently and educate two or three children as they ought.

I will cite the condition of the profession in Ohio to-day, which could be remedied by organization. The coroner of Lake County treats 350 lodge members for $1 a year each. He has a contract to treat the poor of a population of 2,500 people, three-fourths laboring people, for $25 per year—worth $300 to $500, also a contract with the county directors of infirmary to go a distance of nearly five miles and treat the inmates for $100 a year. Township trustees, in nearly every township in the state, farm out the poor for treatment in many instances to incompetent or unscrupulous physicians, for about $50 a year for work that if fair fees were paid would amount to anywhere from $200 to $500 a year.

The Lake Shore Railroad Company does not pay any of its local railroad surgeons, a pass being the only remuneration. At Ashtabula, Ohio, there is more than $1,000 worth of work in the yards every year. At Collinwood, where the yards of the L. S. & M. S. R. R.—the greatest shops in the world—are located, employing nearly 3,000 men, two young surgeons are paid the magnificent salary of $100 a year for tending to the accident work of all employes. The P. & W., now a branch of the B. & O., at Painesville, Ohio, where their terminal employs a large number of men, pay the surgeon $100 a year, I am told by a doctor who once held the appointment.

The writer has been doing the accidental surgery for a small steel structural plant, recently moved to this place from Cleveland. Recently I charged $1.50 for removing a speck of steel from the eye of an employe. I had also dressed a scalp wound for another employe which took more than an hour, and in which it was necessary to insert five stitches; the patient was suffering from slight concussion and the wound and hair was filled with clot and shop dirt. My bill for this was $5.

The company informed me that it had not paid more than $1 for removing bodies from the eye, nor more than $3 for dressing any scalp wound, in Cleveland. That they would pay such and such fees for such and such injuries, and hoped that I would see very clear to render services to employes at terms stipulated by them, and that if I would reduce the above rendered bill to $1 and $3 respectively, they would mail check

The members of the profession are constantly humiliated and insulted by wealthy corporations, state, county and city officials. Why? Because, as a lawyer once said in an important case, "doctors are all a set of d—— fools," and because the profession is not organized. If the physicians of this county and Cuyahoga were organized as they should be with a uniform fee bill, having a black list and protection features, I could reply to the officers of that plant that the profession of the county had a fee bill, the terms of which I could not deviate from, and that if they did not want to pay my charges for services rendered I did not have to do the work. As it is, if I do not accept the fees the company offers, the work will go to another physician and the company knows it can get plenty of doctors to do their work for whatever they are willing to pay. What the medical profession needs is a leader, to take it out of the valley of poverty and humiliation, a Mitchell, as the miners have, or a Morgan, as the trusts have.

F. H. Todd, M.D.

Unfair Tests.

San Francisco, Oct. 11, 1902.

To the Editor:—In your editorial on "Unfair Tests," in the issue of October 4, you discuss the criticism by the *Pacific Medical Journal* of the questions in pathology submitted by the California State Board of Medical Examiners. In order that your deductions should have full value, it seems to me fair that a full knowledge of the truth of the facts in your premises should be given you. You suppose that the writer of the editorial in the *Pacific Medical Journal* is correct in stating that some were rejected for failure to answer the questions to which exception was taken—"Define cryoscopy," and "What are the characteristic lesions of Hanot's cirrhosis." First, as to the truth of this. The editor of the *Pacific Medical Journal* is dean of a recently organized medical school in San Francisco and president and manager of its board of trustees. Out of a class of 40 or more graduates from this school, 11 chosen ones took the examination; certain of the others have openly stated that they never intended to take any state examination, and our worthy governor has recently given one of these a medico-political job. Of the 11 who took the examination, 6 failed in 4 or 5 of the 9 subjects. From the other two regular schools of San Francisco represented at the examination, there were 48 candidates, and 3 failed. Only one candidate was conditioned in pathology, having obtained less than the required 60 per cent.

Secondly, over 75 per cent. of the candidates defined Hanot's cirrhosis more accurately than you have done in your editorial. This places the statement of the editor of the *Pacific Medical Journal* where it belongs. As you say yourself "from the published questions, the examinations seem eminently fair in all other respects," I think it only just to your readers to state that the examinations were particularly easy and were easily marked. A few questions may have been asked rather to test the kind of teaching done in some of the schools than to catch the students; but when a school, in this age, graduates a man who defines intussusception as "the susceptibility of some people to disease," it is time that the respectable element of the profession take steps to protect itself as well as the public by ascertaining the quality of the teaching in our institutions and by ferreting out those who display both ignorance and defiance of the law. Respectfully yours,

Dudley Tait,
Vice-Pres. Cal State Bd. Med. Exam.

Incompetent Hospital Management.

Chicago, Oct. 15, 1902.

To the Editor:—My attention has been called to an article in your number of October 11 [pages 918 and 920] speaking of one of our nurses who was concerned in the late accident at the Presbyterian Hospital and stating that the nurse had been dismissed. This is not correct. She has not been dismissed, nor have we the slightest intention of dismissing her. She went home because she was very much disturbed and unstrung, as was perfectly natural, though the chief blame did not rest on her, but on the person who sent 1 gr. strychnin tablets to the ward, where the only ones usual and permitted are 1/60 grain. The fault of the nurse was only in the fact that she assumed that the tablets were the usual ones, and did not read the full label to see. Her career is not ended; she will finish her course, and no one who knows the full facts can feel anything but sympathy for her, in that she has suffered acutely, while not seriously in fault.

Lucy L. Flower,
President Illinois Training School for Nurses.
177 Lake View Avenue.

State Boards of Registration.

Montana Report.—Dr. William C. Riddell, secretary of the Board of Medical Examiners of Montana, reports the examination held at Helena, October 7, 8 and 9, as follows: Number of subjects, 14; questions, 70; percentage required to pass, 75; written examination; total number examined, 20; passed, 16; failed, 4.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent
1	R.	Victoria University, Canada	1876	77
18	R.	College of Phys. and Surgs., Chicago	1902	80
4	H.	Homeo. Med. Coll. of Mo., St. Louis	1898	77
5	H.	Chicago Homeopathic Med. College	1902	†75
6	R.	Rush Medical College	1889	75
9	R.	Rush Medical College	1899	82
7	R.	University of Minnesota	1897	84
10	R.	University of Minnesota	1901	81
8	R.	Marion Sims Med. Coll., St. Louis	1898	75
19	R.	Marion Sims Med. College, St. Louis	1896	*76
11	R.	Northwestern University, Chicago	1900	84
15	R.	Northwestern University, Chicago	1900	75
12	R.	McGill University	1901	85
14	R.	Bellevue Medical College	1900	79
16	R.	Kentucky School of Medicine	1902	75
17	R.	Creighton Medical College, Omaha	1902	76

FAILED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent
20	R.	Missouri Medical College, St. Louis	1889	51
2	R.	College Phys. and Surgs., Keokuk	1891	68
3	R.	College Phys. and Surgs., St. Louis	1895	65
13	R.	Medico-Chirurgical Coll., Philadelphia	1893	65

†Fourth Examination.
*Second examination.

Thirty States Will Reciprocate.—President J. R. Currens, of the Wisconsin Board of Medical Examiners, announces for the Federation of Reciprocal Examining Boards that probably thirty states will unite in the arrangements. The next meeting is to be held in Chicago in November.

Ohio Board Revokes Licenses.—The Ohio State Board of Medical Registration and Examination revoked the licenses of Drs. A. E. Hoskinson and Charles F. Cookes of Columbus, October 7, for alleged criminal malpractice. It is stated that the state's attorney will follow this with prosecution in the criminal courts.

Western States to Reciprocate.—Following a call from the Kansas and Missouri boards, representatives from Iowa and Nebraska met with them October 15 at Kansas City and discussed reciprocal recognition of certificates. A further meeting will be held, November 17, at Kansas City. Illinois, Texas, Colorado, Arkansas, Oklahoma and New Mexico are also asked to join in the arrangements.

Photographs to be Shown in Missouri.—The State Board of Health has decided to require photographic identification of candidates, because of several attempts at impersonation of other persons they allege to have occurred. The board was in session October 15 and 16. It is stated that the license to practice of Dr. Lyman B. Powell was revoked on the alleged ground of habitual drunkenness. Other cases of unprofessional conduct were before the board, but not acted on.

Utah to Reciprocate.—At the quarterly meeting, October 7, of the Utah Board of Medical Examiners, a resolution was passed instructing the secretary to communicate with medical boards of other states with a view to a reciprocal acceptance of certificates of efficiency to practice medicine and surgery. Another resolution was passed to notify all such as use the title of doctor without warrant that they will be prosecuted therefore under the state statute covering this offense.

Miscellany.

The Indiana Practice Law.

The Supreme Court of Indiana has just given out a decision that seems to settle the status of the practice law of that state as regards a large class of irregular practitioners. One Parks, a "magnetic healer," was convicted in the Lawrence County Circuit Court of violating the medical law. He advertised himself as professor and magnetic healer, was not a graduate of any school of medicine and had no license. His treatment, so far as there was anything manual about it, consisted in holding the affected parts and rubbing. The court's decision affirms the validity of the indictment and of the statute which had been challenged by the appellant, the latter as a proper application of the police powers of the state. It says:

> It appears from the evidence that at the time in question the appellant practiced magnetic healing, and had done so for eight years prior thereto; that he did not use medicines or surgery; that he held himself out as a magnetic healer, advertised as such, and styled himself "professor"; that he was not a graduate of any school of medicine and had no license; that he diagnosed cases entirely by the nerves; that on April 8, 1901, one Edward Garvey came to him, to be treated for a lame ankle; that after examining the ankle appellant diagnosed the case as rheumatism, and proceeded to give him treatment, which consisted, at least in so far as there was anything manual about it, in holding the affected parts and rubbing them. An effort on the part of the appellant, while testifying as a witness, to describe magnetic healing was prefaced by the statement that "it is pretty hard to describe for people to understand." At this point he was interrupted by the court, and the subject does not seem to have been pursued further. Appellant charged and received one dollar for the treatment that he gave said Garvey. There can be no question as to the appellant's guilt, if the act under which he was convicted is valid.
>
> For hundreds of years the matter of the conservation of the public health has been a leading matter of police control. If a man holds himself out to the community as a person skilled in the science of healing and on that ground seeks the opportunity to exercise the skill he claims to possess, his business becomes impressed with a public character, and he is therefore subject to reasonable regulation in its prosecution.

The limitations of the police power by the Federal Constitution, especially as regards discrimination against personal rights, are discussed by the court, which says:

> Counsel for appellant denounce the law in question as "an attempt to determine a question of science and control the personal conduct of the citizen without regard to his opinion, and in a matter in which the public is in no wise concerned." We think, on the contrary, that the matter is one of very considerable concern, and that the legislature is the appropriate tribunal to determine the degree of learning that those who gain a livelihood by seeking to relieve the bodily ailments of others should possess. While it is true that the often-quoted definition of police power afforded by Chief Justice Shaw, in Commonwealth v. Alger, 7 Cush. 85, contains the limitation that such laws must be wholesome and reasonable, yet it is evident, as the power to enact laws has been confided to the legislative department, that a very large measure of authority is vested in that department to determine what is reasonable and wholesome in the enactment of statutes under the police power. The courts would never venture to run a race of opinion with the legislature on questions of mere expediency. Such a course would be a gross judicial usurpation of power.

The title of the medical practice act was claimed to be insufficient as not in accordance with the constitutional provision that every act shall embrace but one subject and matters properly connected therewith, which subject shall be expressed in the title. This claim is disposed of by the court, which says:

> We do not think that there is involved in this case a question as to the authority of the legislature to discriminate against a particular school of practitioners. We are not judicially advised that magnetic healing, so-called, is so far based on coördinated, arranged and systematized knowledge that it can be termed a science, or that any considerable degree of instruction is a prerequisite to its prosecution as it is actually practiced by those whose knowledge does not go beyond the manifestation of the phenomena of magnetism. It may have been the judgment of the legislature in its implied exclusion of appellant, that both the limitations of value that the treatment possessed and the dangers attending it made it wise to confine its use to a body of men in whose hands it would be safer to entrust it, because of their education in subjects relevant to its administration.

The legislature, in judging of a matter of this kind, was authorized to give heed to the opinions of scientific men, and, presuming that it did so, it doubtless found substantial reason for the act of exclusion complained of. Judged by such authority, it appears that while the practice of magnetic healing is based on some elements of ascertained knowledge, yet that its prosecution is attended with danger to such a degree that the legislature was justified in its effort to take it out of the hands of empirics. Thus, J. G. McKendrick, professor of the institutes of medicine, University of Glasgow, in concluding his learned article on "Animal Magnetism," in the Encyclopedia Britannica, says: "It is evident that animal magnetism or hypnotism is a peculiar physiological condition excited by perverted action of certain parts of the cerebral nervous organs, and that it is not caused by any occult force, emanating from the operator. Whilst all the phenomena can not be accounted for, owing to the imperfect knowledge we possess of the functions of the brain and cord, enough has been stated to show that just in proportion as our knowledge has increased has it been possible to give a rational explanation of the phenomena. It is also clear that the perverted condition of the nervous apparatus in hypnotism is of a serious character, and therefore that these experiments should not be performed by ignorant empirics for the sake of gain, or with a view of causing amusement. Nervous persons may be seriously injured by being subjected to such experiments, more especially if they undergo them repeatedly, and it should be illegal to have public exhibitions of the kind alluded to. The medical profession has always been rightly jealous of the employment of hypnotism, in the treatment of disease, both from the fear of the effects of such operations on the nervous systems of excitable people, and because such practice is in the borderland of quackery and of imposture. Still, in the hands of skillful men, there is no reason why the proper employment of a method influencing the nervous system so powerfully as hypnotism should not be the means of relieving pain or of remedying disease."

As appellant was without the license provided for by statute, it may be presumed that he was engaged in empiricism, which is defined as a practice of medicine, using that term in its popular sense, founded on mere experience, without the aid of science or a knowledge of its principles. The state has by no means denied the right to seek to relieve persons afflicted with rheumatism by the process of manipulating and kneading the diseased or affected parts, with or without the element of hypnotic suggestion, but the legislature has sought to deny to all persons the right to do the acts denominated by statute as "engaging in the practice of medicine" unless they possess the certificate required.

The statute in question, in its general scope, goes no further than to establish a standard that may be attained by reasonable application, and the means has an appropriate relation to the end. There is plainly, as applied to the case in hand, no arbitrary or unreasonable deprivation of right.

There is a very possible broad construction that can be placed on these remarks and even Eddyites might, it seems, at least to a non-lawyer, be brought under the same head of illegal practitioners as the magnetic healers. They have the same notice under the law of what is required, and the title C.S.D. used by them and the functions it advertises and implies would seem to bring them under the definition of the practice of medicine in the Indiana law.

X-Rays Detect Forgery.—According to the *Journal of Medicine*, a man placed under arrest for illegal practice of medicine, claiming to be a graduate of an American college, presented a diploma which excited suspicion. The Roentgen rays revealed the outlines of a name erased to make room for that of the man who was thus convicted.—*Toledo Med. and Surg. Reporter*.

Marriages.

John H. Pryor, M.D., to Mrs. Elizabeth Mayer, both of Buffalo, October 9.

Thomas P. Gray, M.D., to Miss Mary Head, both of Waverly, Ky., September 24.

Chester R. Ogden, M.D., to Miss Edna E. Louchery, both of Clarksburg, W. Va.

Edward Cunat, M.D., to Miss Rose Marie Humpal, both of Chicago, October 15.

Edmund P. Staff, M.D., to Miss Laura Shutt, both of Ramsey, Ill., October 5.

Louis John Beyer, M.D., to Miss Minna Helen Berz, both of Buffalo, September 30.

Archie A. Bee, M.D., Cairo, W. Va., to Miss Jessie Ollom of Belpre, W. Va., October 2.

Jacob S. Otto, M.D., to Miss Elizabeth Townsend Wheeler, both of Buffalo, October 15.

William H. Bell, M.D., U. S. N., to Miss Eleanor York Parker, Philadelphia, October 15.

Haywood S. Hansell, M.D., to Miss Susan Mildred Wilson, both of Atlanta, Ga., October 22.

Joseph P. F. Burke, M.D., to Miss Evelyn Mary Mooney, both of Buffalo, Wednesday, October 8.

Howard Fletcher, M.D., to Miss Mattie Leigh Powell, both of Richmond, Va., at Towson, Md., October 8.

Edward S. Everitt, M.D., Lacon, Ill., to Miss Marie Wetzel of Sparland, Ill., at Peoria, Ill., October 2.

John H. Nichols, M.D., superintendent of the State Hospital, Tewksbury, Mass., to Miss Ada Howe of Danvers, Mass., October 2.

Deaths.

Aaron Mercer Brown, M.D., died at his home in Cincinnati, October 3, aged 63, from edema of the lungs, superinduced by uremia. He was born at Milford, Ohio, where his father and grandfather had practiced medicine before him. He received his medical degree from the University of Pennsylvania in 1861. He was appointed assistant surgeon of the Twenty-second Ohio Volunteer Infantry in 1861, was promoted to be staff surgeon in 1864, and transferred to the Department of Arkansas, of which he was medical purveyor at the close of the war. He was a member of the Cincinnati Academy of Medicine and of the Ohio State Medical Society.

James J. Powers, M.D. College of Physicians and Surgeons, Baltimore, 1882, a popular and successful physician of Denver, died at Santa Monica, Cal., October 3, aged 45. He was a member of the Denver and Arapahoe Medical Society, the Colorado State Medical Society and the American Medical Association.

J. Edwin Miller, M.D. Jefferson Medical College, Philadelphia, 1870, died, October 6, as a result of a bullet wound received at Chancellorville in the Civil war. He was at one time a surgeon in the United States Navy, but for the past twenty-five years has been prominent in private practice

Albert Potter, M.D. Harvard University Medical School, Boston, 1855, who served during the Civil war as assistant surgeon and surgeon of the Fifth Rhode Island Heavy Artillery, died at his home in Chepachet, R. I., October 2, from apoplexy, aged 71.

Lucian L. Bedell, M.D. University of the State of Missouri, Columbia, 1855, at one time a noted surgeon of Denver, died in the insane ward at the Arapahoe County Hospital, October 5, after an illness of more than four months, aged 72.

E. P. Miller, M.D. Kentucky School of Medicine, Louisville, 1892, a member of the Moultrie County Medical Society, died at his home in Sullivan, Ill., October 7, from typhoid fever, after an illness of about six weeks, aged 37.

John W. Taylor, M.D. University of Pennsylvania, Philadelphia, 1849, widely-known throughout Madison County, Va., died at his home in Madison Courthouse, October 4, after an illness of several weeks, aged 76.

Leslie E. Moyers, M.D. College of Physicians and Surgeons, Chicago, 1889, a practitioner of Fairdale, Ill., died at Colorado Springs, Colo., September 2, from consumption, aged 38.

T. T. Orendorff, M.D. Kentucky School of Medicine, Louisville, 1871, died at his home in Rolling Fork, Miss., October 3, from dysentery, after an illness of ten days, aged 55.

E. S. Davidson, M.D., surgeon to the La Pointe Indian Agency of Minnesota and Wisconsin, died at Ashland, from the effects of an overdose of chloral hydrate, October 4.

Hartwig Runge, M.D. University of Berlin, Germany, 1842, a well-known physician of Stillwater, Minn., died at his home in that city, October 5, from apoplexy, aged 80.

William E. Doughty, M.D. University of Pennsylvania, Philadelphia, 1868, died at his home in Hartsville, Pa., October 15, from carcinoma of the stomach.

Herbert B. Beegle, M.D. Rush Medical College, Chicago, 1896, died at Chicago, September 23, from typhoid fever, aged 32.

D. C. Andrews, M.D., who practiced in Pike County, Ill., for a number of years, died at Eureka, Kan., September 25, aged 80.

Joseph L. Conway, M.D. Rush Medical College, Chicago, 1900, died at the home of his parents in Chicago, October 7, aged 24.

Frank W. Whitehead, M.D. College of Physicians and Surgeons, Baltimore, died at Suffolk, Va., October 6, aged 31.

Deaths Abroad.

Dr. E. Meyer, a well-known ophthalmologist of Paris, author of a popular manual and collaborator on the *Revue d'Ophthalmologie*.——**Dr. J. G. Rasch,** at Fredrikshald, Norway, September 27, in his seventy-second year. He was co-editor of the *Tidsskrift f: d. Norske Laegef.* at one time, and has been prominent in matters affecting the welfare of the profession.——**Dr. Leo Kaplan**, *author of numerous articles on the histology of nervous affections, at the Herzberg asylum, of which he had charge.*——**Dr. G. v. Glossler**, *at Danzig, formerly "Cultus-Minister" of the German empire.*——**Prof. A. Sigel**, *at Stuttgart, director of the Olga Children's Hospital.*

Societies.

COMING MEETINGS.

Conference State and Provincial Boards of Health of North America, New Haven, Conn., Oct. 28-29, 1902.

Oklahoma Territory Medical Association, Guthrie, Nov. 11, 1902.

Southern Surgical and Gynecological Association, Cincinnati, Nov. 12-14, 1902.

Christian County (Ill.) Medical Society.—The physicians of this county held a meeting at Taylorville and effected a temporary organization.

Southeastern Iowa Medical Association will meet at Fairfield, Iowa, November 20, under the presidency of Dr. Charles F. Wahrer, Fort Madison, Iowa. Dr. Carl Stutsman, Burlington, is secretary.

Holyoke (Mass.) Medical Association.—The annual meeting of this society was held, October 6. Dr. Daniel F. Donoghue was elected president; Dr. Joseph H. Potts, vice-president, and Dr. Jesse L. Bliss, secretary and treasurer.

Goodhue County (Minn.) Medical Society.—The physicians of Goodhue County have organized this society at Red Wing with the following officers: President, Dr. Charles Hill, Pine Island; vice-presidents, Drs. B. Jaehnig, Red Wing, and Joseph A. Gates, Kenyon, and secretary and treasurer, Dr. John V. Anderson, Red Wing.

Austin Flint-Cedar Valley (Minn.) Medical Society.—At Waverly, Iowa, on October 14, these two old and honored medical societies were merged into one. The officers of the new societies are: Dr. Dallas M. Wick, Cedar Falls, president; Dr. Fred W. Powers, Reinbeck, vice-president; Dr. William A. Rohlf, Waverly, secretary, and Dr. John C. Wright, Clear Lake, treasurer.

East Tennessee Medical Society.—This society met at Morristown, September 25, in twelfth annual session. Dr. William A. Applegate, Chattanooga, was elected president; Dr. George M. Peavler, Bristol, vice-president; Dr. Charles J. Broyles, Johnson City, secretary, and Dr. William J. Matthews, Johnson City, treasurer. The next meeting will be held at Knoxville, in September, 1903.

Eaton County (Mich.) Medical Society.—Dr. Albert E. Bulson, Jackson, president of the Michigan State Medical Society, and Dr. William H. Haughey, Battle Creek, met with the doctors of Eaton County at Charlotte, October 2, for the purpose of forming a county organization. Dr. Bulson briefly explained the objects of the association, a temporary chairman and secretary were chosen and a constitution and by-laws formulated and adopted.

North St. Louis (Mo.) Medical Society.—At the annual meeting of this society, Dr. Hugo Summa was elected president; Dr. Herman L. Weiterer, vice-president; Dr. Henry J. C. Sieving, secretary; Dr. William T. Hirschi, corresponding secretary, and Dr. Frederick S. Haeberle, treasurer. The second meeting of the society was devoted to the memory of Professor Virchow. The principal addresses were delivered by Drs. Hugo W. Bartscher, Frederick S. Haeberle and Hugo Summa.

Muhlenburg County (Ky.) Medical Society.—The physicians of Muhlenburg County met at Central City, October 10, and after a talk by Dr. McCormack on the advantages of organization, formed a county society, of which Dr. J. T. Woodburn, Bremen, was elected president; Dr. Thomas G. Turner, Dunmor, vice-president, and Dr. Augustus Lewis, Greenville, secretary. The constitution and by-laws suggested by the American Medical Association were adopted. The society will meet monthly.

Todd County (Ky.) Medical Society.—The physicians of Todd County met at Elkton, October 11, to consider the advisability of organizing a county society. Dr. J. A. McCormack made a talk on the benefits, scientific and material, to be derived from properly-sustained local organization, and it was unanimously decided to form a society, of which Dr. W. B. Jefferson, Elkton, was elected president, Dr. Robert M. Frey, Trenton, vice-president, and Dr. Thomas E. Bruce, Elkton, secretary. Meetings will be held monthly.

Union Medica Hispano-Americana.—An association with the above name has recently been organized at Madrid with the intention of uniting in an international organization the physicians and surgeons of the Spanish-speaking countries. A special session will be held at the same time and place as the great international medical congresses. The first regular meeting of the association has been appointed for May 1, 1903, at Madrid. J. Callejo is president and J. Decref secretary. Further details can be obtained by addressing the latter at Madrid, Calle de Atocha, 106.

Hodgen District (Mo.) Medical Society.—This society, composed of physicians of the counties of Cass, Bates and Vernon, met at Nevada, October 2, and by unanimous vote decided to reorganize in conformity with the provisions suggested by the Medical Association of the State of Missouri. A committee on constitution and by-laws was appointed to report at next meeting, to be held at Butler, Jan. 1, 1903. The following officers were elected for the ensuing year: President, Dr. J. Robert Buchanan, Nevada; vice-presidents, Drs. Ira Smith, Austin, Cass County; Dr. T. C. Boulwan, Butler, Bates County, and Edgar A. Dulin, Nevada, Vernon County, and secretary-treasurer, Dr. H. A. Rhodes of Bates County.

Toronto Clinical Society.—The first meeting of the Toronto Clinical Society for the season 1902-03 was held October 8. Dr. Edmund E. King, the president, delivered the annual address. After referring to the importance and work of the society, Dr. King discussed the surgery of the prostate gland. He first spoke of the development of the gland, its quiescent state, the changes that are liable to occur in it, and then detailed some of the means devised for the relief of those changes. The pioneer in this branch of surgery was Sir Henry Thompson, and so thorough was his work that we still accept his data as true. We are, however, advancing on the point of surgical interference. Referring to the unsettled question of the cause of prostatic hypertrophy, the author believes that the senile theory is the least tenable, as there are many instances on record of large, true hypertrophies existing before the age of 30. Dr. King has had under his care during the past 5 years many cases of enlargement of the prostate accompanying seminal vesiculitis, in which the gland shrunk back to normal size after the seminal vesiculitis was cured. To him it is clear that the chronic inflammation of the vesicles is responsible for the prostatic enlargement. Although the condition present in these cases may not be true hypertrophy, he believes it to be the beginning of chronic true hypertrophy. He divides the treatment into palliative and radical. He discussed the palliative treatment under four heads: The constant use of the catheter; perineal drainage, through retained tube; suprapubic puncture with retained tube and suprapubic cystotomy with retained tube. As regards the radical relief Dr. King referred to fifteen different ways of remedying the condition. Dr. King then dealt in detail with the several methods and their authors. He looks forward to a rapid advance in this branch of surgery in the near future. A case of excision of the right shoulder for myeloid sarcoma in a girl of eleven years was next reported by Dr. G. Silverthorn, who also presented the patient. The patient now has a fair amount of control of the arm. The points Dr. Silverthorn wished to emphasize were, first, the possibility of spontaneous fracture as a cause of pain and tenderness; second, that there are sarcomata that do not bleed freely on being disturbed; and third, that myeloid sarcomata are the least malignant of all the sarcomata, some authorities going so far as to say that myeloid sarcomata never give rise to secondary deposits, either in lymphatic glands or viscera. Dr. D. J. Gibb Wishart addressed the society on nose building with paraffin, reporting a case successfully operated on.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Proceedings of the Twenty-Eighth Annual Meeting, held at Kansas City, Mo., Oct. 15 to 17, 1902.

Under the presidency of Dr. S. P. Collings, Hot Springs, Ark.

The Relationship Syphilis Bears to the Body Politic.

This was the title of the presidential address. His reasons for selecting this subject were: First, the importance of calling attention constantly to a disease so widespread as syphilis; second, it is a disease which by proper education concerning its frequent occurrence and its various modes of transmission can be controlled more effectively than most diseases, and, thirdly, for the past twenty-five years he had been a daily observer of its frightful ravages on society. The history of syphilis is so closely interwoven with the history of the world that it is difficult to disassociate one from the other. The prevention of the spread of syphilis, in the author's opinion, by educating the public more thoroughly, as it is being educated concerning the communicability and modes of transmission of tuberculosis, should be more vigorously advocated. The public, however, must first be willing to learn before it can be taught.

In our day the prohibition of prostitution is not practical. Regulation of the vice has proved ineffectual in controlling its spread. If it is legalized, the men frequenting the houses should be subjected to the same rules in regard to examination that the unfortunate inmates are subjected to. Syphilis is prolific of harm to humanity; its dire results are far-reaching; it is no respecter of persons, being as vicious in the palace as in the hovel, and physicians can do more by educating their patients than all the laws that had been or will be enacted can do to prevent its spread.

The association divided its scientific work into two sections, medical and surgical.

Typhoid Fever: Its Antiseptic Treatment.

Dr. James Billingslea, Baltimore, during the past year had treated in private and hospital practice 150 cases of typhoid fever, with acetozone, and the results had surpassed his expectations, not a single death having occurred.

The special treatment consisted in dissolving 15 to 20 grains of acetozone powder—equal to 7½ or 10 grains of the benzoyl-acetyl-peroxid—in a quart of water and giving the patient this amount to drink in the twenty-four hours, both in water and in milk, diluting the milk one part of acetozone solution to three parts of milk. The action of the drug would be materially aided by administering a mild saline laxative, say sodium phosphate or magnesium sulphate, every other day.

Dr. Wm. F. Barclay, Pittsburg, Pa., had given for years a solution of acetate of ammonia, administering one or two drams every three hours during the day, with quinin at night, if indicated. He excluded milk as a diet, believing that it was dangerous.

Dr. John M. Batten, Downingstown, Pa., believed that large doses of quinin were dangerous. The antiseptic plan of treatment prevented autointoxication.

Dr. John J. Taylor, Streator, Ill., had used acetozone for the last three years in typhoid fever, and considered it a valuable antiseptic.

What Class of Pulmonary Cases Do Well in Colorado?

Dr. W. A. Campbell, Colorado Springs, gave an analysis of 250 cases, whose average age was 29 4/5 years. Sex or social station made no difference in physical condition or result. Twenty-nine states and five foreign countries furnished the cases. Those with tubercular family history did not do as well as the *non*-tubercular. The percentage of benefited decreased as the duration of the disease increased. The right lung was involved alone oftener than the left. The percentage of benefited was slightly in favor of the right lung. Where both lungs were involved, the mortality was 50 per cent. In the first stage cases 92 per cent. were benefited; in the second stage, 54 per cent.; in the third stage, 13 per cent. Hemorrhage occurring in the first stage of the disease is no contraindication to residence in high altitude. The diminished arterial tension and dilatation of external capillaries due to lessened atmospheric pressure makes it safe for hemorrhagic cases to seek a higher altitude. He would not send cases of acute miliary tuberculosis of phthisis florida to high altitudes. Neither would he send those extremely nervous, with an irregular or rapid heart and high temperature. Cases well advanced, with rapidly breaking-down lung, or those having cardiac dilatation or acute endocarditis or myocarditis, or Bright's disease should not come. Cardiac murmurs were no contraindication if compensation had taken place. Advanced laryngeal or intestinal cases did not do well. He would have patients come with sufficient money to support themselves on good food until acclimated and improvement was well advanced. In conclusion, he cited the high percentage of benefited in the first stage, and made an appeal for the early detection and early protection of the tubercular subject.

Digestive Disorders in Consumption, with Notes on Mixed Infections.

Dr. Paul Paquin, Asheville, N. C., regarded consumption as a mixed infection. The most vital question is that of nourishment, whereon one might base such measures of treatment as might be deemed best for restoration. Without nourishment of a sufficient kind in quantity and quality, nothing would avail in therapeutics. Among the local measures are stomach and high intestinal lavage. He had known patients who were declining steadily from the ravages of consumption and dyspepsia to gain from two to four pounds a week after the beginning of weekly or semi-weekly lavage of the stomach alone. As specific measures, serotherapy, the cacodylates and iodin offered the greatest aid in preventing organic changes. Immunizing and antitubercle serum was effective, because it was antagonistic to the tubercle toxins, which were, in a large measure, responsible for such lesions. Mixed infections in tuberculosis offered the greatest complexity in the dyspepsia accompanying them. He thought it was due to the effect of a combination of the numerous kinds of germ poisons produced in such cases, both in the lungs and alimentary canal.

Excellent Results in the Treatment of Disease, Especially Tuberculosis, by the Use of the Ultra-Violet Ray.

Dr. Albert E. Sterne, Indianapolis, read this paper. His conclusions are: 1. Actinic rays are chemical in their quality, but of small caloric value. 2. They exist mainly in the ultra-violet zone of the spectrum. 3. Actinic rays derived from high power electric lights are similar or identical to those of solar origin. 4. Their use is as rational as sunlight itself. 5. Their value lies in their decomposing, but, at the same time, reconstructive, *molecular action on* the body tissues, mainly the blood elements. 6. Their activity is enhanced by the generation of ozone in free and nascent form. 7. Their ultimate effect is one of oxidation, and consequently they increase the metabolic changes, thereby augmenting the natural processes of regeneration within the system. 8. Their germicidal action is especially pronounced, on account of the fact that germs can exist in the presence of free or nascent oxygen in either bi- or tri-anatomic form.

Sanatorium Treatment of Pulmonary Tuberculosis, and How It May Be Carried Out at Home.

Dr. Robert H. Babcock, Chicago, discussed this phase of the subject. He divided the sanatorium treatment into four classes: Pure air, nourishment or forced feeding, hydrotherapy, and a strict régime or control of the patient's daily life. The open-air treatment was obtained by the patient being exposed on a balcony or in properly-constructed shutters where he was protected from cold winds and elements, and kept in the open air, sometimes even when the temperature was as low as 13 degrees below zero. Among the conditions which indicated rest in the open air were *progressive loss of weight* and cardiac asthenia. When patients had passed out of the stage in which these conditions existed, were convalescing, then exercise was permitted, the exercise being carefully determined by the medical attendant. The nourishment of the patient was carefully selected, not only with reference to a proper proportion of proteids, which should be large, but also included the proper amount of carbohydrates. Milk, raw eggs, meat, and its varieties, poultry and fish, etc., were the articles on which reliance was chiefly placed.

Hydrotherapy played an important part in the treatment. Hydrotherapy was applied for the purpose of stimulating nutrition, toning up the circulatory system, and overcoming the hypersensitiveness of the skin, which existed in so many tuberculous patients.

As to the control of the patient, a very important element in treatment, every patient should be controlled from the time he got up in the morning until he went to bed, and this was done by the supervision of a skilful medical attendant and nurses. The temperature was carefully recorded, and even the recreations in which they indulged were carefully selected by the medical attendants, with a view to the prevention of excitement, for even mental emotion was deleterious to many of these patients.

Dr. Babcock detailed the home treatment at considerable length, saying that the majority of medical practitioners were not fully alive to the importance and value of this treatment, and were not properly instructed in the details or method.

Tent Life in the Treatment of Tuberculosis.

Dr. A. Mansfield Holmes, Denver, after an extended experience with tent life in Colorado, felt justified in making the following deductions: It increased the appetite; improved nutrition; diminished cough; night sweats ceased; sleep was improved; weight increased; fever decreased and the tendency to take cold was diminished.

How Not To Be Nervous.

The address in medicine was delivered by Dr. Hugh T. Patrick, Chicago, who stated that the initiative of all therapeutics should be prophylaxis. To be able to present a specific illustration of the force of inheritance in the genesis of functional nervous affection, he had tabulated from his office records 100 consecutive cases which might be included under the general term nervousness, and he found that in 70 per cent. of them a neurotic heredity had been in evidence. While a bad heredity was the most frequent and most potent factor in the production of nervousness, knowledge of this fact should not lead the profession into apathetic resignation, but rather make it face the difficulty with wise determination. Next to inheritance came the never-ceasing formative power of environment. Reaction to extraneous influences began at birth, and ceased only with the extinction of life, but childhood and youth were the plastic stages. For preventing nervousness in the child or removing that already present, Patrick thought that there was nothing so effective as the toughening of the body and mind. A child who was made to have tough muscles, strong lungs and a vigorous digestion; who could stand changes of temperature and endure pain, was already a long way from nervousness. More important still was toughness of psychic fiber. The child who could support disappointment, who could be crossed without a tantrum, and who habitually obeyed, was building a bulwark against nerves, and the one who was not easily frightened, had self-control and a budding courage had nipped half a dozen neuroses in the bud. But to procure this toughness a certain exposure to bodily discomfort and mental hardship was necessary.

The author discussed at length the prophylaxis of the neuroses in children, and then passed on to the consideration of adult life. He said a deal of nervousness was caused or helped along by misdirected energy, misplaced worry, longing for baubles, the fighting of phantoms, etc. To recognize the important things in life was one of the most difficult tasks of judgment that came to the individual.

To sum it all up, the author said: "If you wish never to be nervous, live with reason, have a purpose in life and work for it; play joyously; strive for the unattainable, never regret the unalterable; be not annoyed by trifles; aim to attain neither great knowledge nor great riches, but unlimited common sense; be not self-centered, but love the good, and thy neighbor as thyself."

Neurasthenia.

Dr. George F. Butler, Alma, Mich., said neurasthenia was the expression of nerve tire of the central nervous system and its consequences. Nerve tire of the central nervous system implies acceleration of the action of the excitomotor ganglia of the organ, with first, increased functionating of these organs, and, second, exhaustion with its consequences. In this way central nerve tire, finding expression along the line of least resistance, produces local organ expressions which were claimed as the cause of the constitutional condition. From these local expressions a vicious circle often results which aggravates the original condition. As overaction of the organs implies underelimination, autotoxemia, of necessity, follows nerve tire, of a very poisonous type, like all products of nerve waste. From this, renal and hepatic disturbances are added to the clinical picture and intensify its blackness. Neurasthenia may occur alone, or may be an expression and complication of any constitutional disorder. In such case both the nerve tire and the constitutional disorder require treatment. The neurasthenia resultant on phthisis, nephritis, diabetes and syphilis is a true neurasthenia which, if not treated, intensifies the disorder which gave it birth.

The treatment of neurasthenia consists in the relief of the nerve tire and conditions underlying it through proper diet, hydrotherapy, balneotherapy, relief of insomnia and removal from an etiologic environment. Neurasthenia untreated may produce degenerate offspring, especially if the patient be a woman.

The Criminal Responsibility of the Epileptic.

Dr. John Punton, Kansas City., Mo., drew the following deductions: 1. Epilepsy is a symptom of some brain disease. 2. Its continual presence tends toward mental deterioration. 3. The mental responsibility of the epileptic depends on the extent to which mind or self-control has been impaired by the epilepsy. 4. The legal test of insanity is not sufficient as mental irresponsibility is not incompatible with a knowledge of right from wrong. 5. Epileptics are to some degree, at least, responsible for criminal acts, more especially when the epilepsy is produced by their own default. 6. Criminal acts of epileptics appeal to medicine rather than law for their proper adjudication. 7. In all cases of murder where epilepsy is proven, the law should be amended to allow of life commitment to an insane asylum rather than to a penitentiary. 8. The mental responsibility of the epileptic in case of murder should be referred to a medical commission appointed by the court, which again may be referred to local or county medical societies to name its members.

Sudden Atrophic Influence of Craniospinal Nerves.

Dr. F. E. Coulter, Omaha, reported a case and described the areas involved. He said that under certain conditions craniospinal nerves may exercise a sudden atrophic influence on the skin and the appendages thereof.

Eye Diseases.

Dr. James Ball, St. Louis, discussed the diagnosis, symptoms, etiology, prognosis and treatment of sympathetic irritation.

Dr. J. W. Sherer, Kansas City, followed with a paper on "Toxic Amblyopia." Five cases of toxic amblyopia from methyl alcohol had been seen by him. The eyes appeared normal externally, with pupils slightly dilated. The media were clear. There were no hemorrhages. Early there were no fundal signs, but later atrophy was visible. The fields were contracted and showed absolute central scotomata. Pathologically, the condition was that of peripheral neuritis affecting the optic nerves or retro-bulbar optic neuritis.

A paper on "Bilateral Glaucoma" was presented by Dr. Flavel B. Tiffany, Kansas City, in which he reported the case of a patient on whom he performed double iridectomy.

Diseases Preceding and Following the Use of Alcohol and Opium.

Dr. T. D. Crothers, Hartford, Conn., said clinical study pointed out many distinct lines of disease which preceded inebriety, of which syphilis, trauma, dementia and toxic states were most common. Neurasthenic conditions and tubercular diatheses preceded the use of spirits. Atrophic and hypertrophic sclerosis always followed the use of spirits. An early recognition of the organic changes which preceded and emerged into inebriety would enable one to practically prevent the disease.

Treatment of Typhoid Fever with Castor Oil.

Dr. C. C. Bass, Columbia, Miss., reported 32 cases. The results were very gratifying. He commended this treatment as worthy of further investigation.

Culture of Infusoria.

Dr. Henry G. Graham, Chicago, made these deductions: Culture of infusoria will show that: 1. Müller's dust corpuscles are elementary infusoria. 2. The exceedingly minute and actively motile forms are derived from the protozoa.

Pneumonia.

Drs. Wm. T. English and Wm. F. Barclay, Pittsburg, Pa., contributed papers on this subject. The latter believed a rational treatment was based on a study of the immediate causes of death, as concluded in a large number of deaths reported in the city of Pittsburg. Heart failure and exhaustion stood out as the immediate cause of death in 98 per cent. of all reported deaths in a circumscribed area of almost one million people. Rest in bed in well-ventilated rooms, apart from atmospheric conditions, was of paramount importance. He had learned from experience that a most decided course of medication was indicated in the treatment of pneumonia, and that a like course of treatment in cases of la grippe robbed the disease of its terrors. First, rest in bed with requisite protection from atmospheric influences; second, a thorough cathartic of calomel was essential in bringing about a decisive derivative action of the secretions of the body. Five to 10 grains of calomel, with 30 to 60 grains of milk sugar was a formula that had never disappointed him in its beneficial effect. The action of nux vomica, when properly administered, never failed in its power to alleviate the symptoms and afford relief. Tincture of nux vomica should be given in large and frequent doses, well diluted in water.

Treatment of Chronic Dysentery.

This paper was read by Dr. John L. Jelks, Memphis. The disease was considered of microbic origin, although a specific organism had not received general acceptance as the sole causal factor. This was the basis of all treatment. No matter what the classification of the disease, the same general idea as to treatment must obtain, namely, the destruction of the micro-organism, drainage, cleanliness, rest and restoration of the tissues. An erroneous idea had prevailed that the disease was beyond reach of any possible topical medication, further than perhaps the use of the Wales metal bougie, which was not always a safe procedure. The sigmoidoscope and long rubber tube had a field in the treatment of this affection, and it was necessary to educate the profession as to the possibilities of this method. The patients should be placed in sanitary surroundings, free from unnecessary heat and moisture. The diet should be carefully selected. The stomach should receive careful attention. The portal engorgement should be relieved and the intestinal tract thoroughly cleansed. Hemorrhage from the bowel, when profuse, could be controlled by styptic enemata given through the double tube. In using the sigmoidoscope, the author recommended the knee-chest position. The bowel should be thoroughly cleansed through this instrument with antiseptic washes applied very hot. If there was much excoriation or ulceration, nitrate of silver might be applied to bleeding and eroded surfaces with a cotton probang, or in the form of a spray. Higher treatment may be administered through one or two tubes of soft rubber, which can be passed further into the colon and the antiseptic solution administered by enema through these. If necessary, boracic acid, iodoform, or aristol may be insufflated through the sigmoidoscope and the bowel thus thoroughly covered. In the chronic state he had found most benefit from iodoform and ichthyol made into suppositories and passed through the sigmoidoscope into the sigmoid. This was especially indicated in tubercular conditions, but had its use in any form of procto-sigmoiditis or colitis. All toxic drugs must be used with caution.

Affiliation with the American Medical Association.

A resolution was adopted, making the Mississippi Valley Medical Association a district branch of the American Medical Association. The constitution and by-laws of the former will be revised to conform to this change.

The New Officers.

The following officers were elected: President, Dr. Edwin Walker, Evansville, Ind.; vice-presidents, Drs. Hugh T. Patrick, Chicago, and Wm. Britt Burns, Memphis; secretary, Dr. Henry E. Tuley, and treasurer, Dr. Thomas Hunt Stucky, both of Louisville, Ky. Memphis, Tenn., was selected as the place for holding the next meeting, in 1903.

(The report will be continued next week with the proceedings of the surgical section.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Phlyctenular Keratitis.

According to Drs. Wood and Woodruff in *Med. Standard*, phlyctenular keratitis or eczema of the cornea is usually a disease of childhood, and often occurs in conjunction with phlyctenular conjunctivitis. In carrying out the treatment one or two drops of a 1 per cent. *solution of atropin sulphate* should be instilled into the eye sufficiently often to keep the pupil fully dilated. The photophobia is best relieved by the frequent application of cold or iced cloths to the lids. The conjunctival sac may be flushed with solutions of boric acid as follows:

℞. Acidi borici ....gr. x 65
Aq. destil ....℥i 30

Hydrargyri chloridi corrosivum may be substituted for the boric acid solution, used in the strength of 1 to 10,000. This may be used several times a day if the eczema of the skin of the lids is not too extensive. In the latter case it is well to avoid watery solutions. Milk may then be used to wash the face and the lids. The fissures of the external canthus should be *touched* with a 1 per cent. solution of silver nitrate, and an ointment may be placed between the lids composed as follows:

℞. *Hydrarg. oxidi flavi*....................gr. ss 025
Vaselini ....℥i 30

M. Sig.: *A small piece to be placed between the lids at night. The same should be applied two or three times a day to the eczema about the face.*

Where the ulcers show a tendency to chronicity, massage with a stimulating ointment is useful to promote healing. The general health must be given particular attention; such as life in the open air, bathing, and a proper diet, limiting meat to once a day. Eggs and milk should make up the greater part of the diet. The following tonic and hematic may be employed internally:

℞. Liq. pot. arsenitis
Liq. potassæ, āā ....ʒiss 6
Aq. dest. q. s. ad........................℥ii 60

M. Sig.: *One teaspoonful in water after each meal.*

Second Stage of Acute Bronchitis.

The following is recommended by *Amer. Med.* for the treatment of acute bronchitis in the second stage:

℞. Ammonii chloridi ....ʒii 8
Syr. picis liquidæ ....℥iii 90
Heroin hydrochlor. ....gr. ii 12
Tinct. card. comp. ....℥i 30
Aq. anise q. s. ad........................℥vi 180

M. Sig.: One dessertspoonful *four* times a day.

Artificial Feeding of Infants.

Rotch recommends the following percentage modifications in preparing artificial feeding for infants, which can be made up by experienced laboratories:

	Percentage			
	Fat.	Sugar.	Proteid.	Mineral Matter.
First week	2.00	5.00	0.75	0.15
Second week	2.50	6.00	1.00	"
Third week	3.00	6.00	1.00	"
Fourth to sixth week	3.50	6.50	1.00	"
Sixth to eighth week	3.50	6.50	1.50	"
Two to five months	4.00	7.00	1.50	"
Four to eight months	4.00	7.00	2.00	"
Eight to nine months	4.00	7.00	2.50	"
Nine to ten months	4.00	7.00	3.00	"
Ten to ten and a half months	4.00	5.00	3.25	"
Ten and a half to eleven months	4.00	4.50	3.50	"

Eleven months, unmodified cow's milk.

He also gives a table by which the percentage modification may be made at home, as well as in the laboratory. Davis, in the "Sys. of Phys. Ther.," states that owing to the lack of cleanliness of nursemaids or mothers as good results can not be obtained as are obtained from milk made up at the laboratory. When it is desired to carry out milk modification at home, the greatest efforts should be made to procure fresh milk of uniform character. As soon as it is obtained it should be put into a quart fruit jar on which the top should be fastened tightly. The full jar must be kept for the next six hours constantly tight, at a temperature of approximately 35 F. At the end of this time the cream will be at the top of the jar. If the upper fourth is now separated from the rest the needed cream and skimmed milk will be obtained. This separation, according to Davis, is best accomplished by siphoning off twenty-four ounces, or three-fourths, from the bottom of the jar. The upper fourth, amounting to eight ounces, is left in the jar.

By observing the foregoing method of separating the milk and cream, any intelligent person can prepare the infant's food by the following table advised by Rotch, which is revised to correspond approximately with the above percentages:

	Ounces				
	Cream.	Milk.	Lime Water.	Distilled Water.	Milk Sugar.
1st week	2	2	1	15	2
2d and 3d week	5	0	1	14	2½
4th to 8th week	7	1	1	11	2½
2 to 5 months	8	0	1	11	2¾
5 to 8 months	8	2½	1	8½	2½
8 to 9 months	8	5	1	6	2¼
9 to 10 months	8	7½	1	3½	2
10 to 10½ months	8	8	1	3	⅞
10½ to 11 months	8	12	0	0	0

These proportions give twenty ounces to each mixture. Sufficient should be prepared to last twenty-four hours and divided into the required number of feedings. These should be stoppered with antiseptic cotton and placed in a clean refrigerator.

For premature infants the following formulæ should be used:

Age (When Born).	Fat.	Sugar.	Proteid.	Number of Meals.	Amt. at Each Feeding.
28 weeks	1.00	3.00	0.50	24	1 dram.
29 to 32 weeks	1.50	4.00	0.50	24	2 drams.
32 to 36 weeks	1.50	5.00	0.75	24	3 drams.
36 weeks and over	2.00	5.50	1.00	24	4 drams.

Holt recommends the following formulæ for infants two months old, taking twenty-four ounces a day.

℞.	Top milk	℥viii	240
	Barley water	℥xvi	480
	Milk sugar	ʒvi	24
Or:			
	Cane sugar	ʒiv	16

The foregoing formula may remain the same until the sixth or seventh month, when the following mixture may be substituted:

℞.	Top milk	℥xix	570
	Barley water	℥xix	570
	Milk sugar	ʒix	36
Or:			
	Cane sugar	ʒv	20

White of Egg Lemonade.

R. W. Leftwich, according to *N. Y. Med. Jour.*, recommends very highly the following preparation as a nutritive drink for febrile disorders:

R. Two lemons.
The white of two eggs.
One pint of boiling water.
Loaf sugar to taste.

The lemons must be peeled twice, the yellow rind alone being used, while the white layer is rejected. Place the sliced lemon and the yellow peel in a quart jug with two lumps of sugar; pour on them the boiling water and stir occasionally. When cooled to about the ordinary temperature of tea, strain off the lemons. Now insert an egg whisk, and when the lemonade is in full agitation, add slowly the white of the egg and continue the whisking. While still hot strain through muslin and serve when cold. The white of the egg will be found to impart a blandness which makes the addition of sugar almost unnecessary. This absence of sweetness is greatly appreciated in the pyrexial cases, and has its obvious value for diabetics.

For non-febrile cases with clean tongues, more than two eggs may be used to the pint if desired. This drink is contraindicated only in the cases of true Bright's disease. It is very useful in the febrile diseases of childhood. It also possesses antiscorbutic properties which replace those lost from milk by boiling and sterilization. It is recommended as a part of the diet in typhoid fever, forming a relief from the monotony of milk, and does not have the constipating and flatus producing effects that lie in beaten-up eggs that include the yolk. The author states that the patient who takes plenty of this lemonade in addition to four pints of milk per day will emerge from the pyrexial period of typhoid fever in a much stronger condition than without its use.

Sciatica.

Brieger, according to an abstract in *Amer. Med.*, has employed successfully a method of treatment consisting of a proper combination of heat and cold. The recovery, according to the author, is more rapid if the hydropathic procedures are accompanied by massage and movements. During the application of a hot douche, the leg is massaged, after which it is exposed to a cold douche. He cites several cases which had been treated only by massage and failed to recover. He also gives hot baths at a temperature of 38 C., and during the bath, passive and active movements are practiced. If the latter be performed when in the hot water considerable of the excruciating pain that accompanies motion in sciatica is avoided. By this method of baths, douches and movements, patients of one year's standing recovered in forty-six days, and in one case of two years' duration the sciatica disappeared in two weeks.

Myocarditis.

Lemoine of Lille, according to R. H. Turner, in *Ther. Gaz.*, states that the best drug to be used in myocarditis is strophanthus, and he recommends giving two pills, each containing half a milligram of the extract of strophanthus when there are signs of cardiac insufficiency. In serious cases, when a result must be obtained quickly, injections of ether or of camphorated ether should be given:

℞.	Camphoræ	gr. v	30
	Spts. etheris		
	Alcoholis, āā	ʒi	4

M. Sig.: Fifteen to forty-five drops in twenty-four hours.

Spartein sulphate may also be used hypodermically as follows:

℞.	Spartein sulph.	gr. v	30
	Aquæ	ʒiiss	10

M. Sig.: Fifteen to forty-five drops in twenty-four hours.

Strychnin sulphate may be employed when the heart muscle fails to respond to spartein injections:

℞.	Strychninæ sulph.	gr. ¼	015
	Aquæ	ʒiiss	10

M. Sig.: Five to fifteen drops once or twice in twenty-four hours.

Medicolegal.

Duty of Injured Person in Employment of Physician.—The Supreme Court of Washington says that throughout the trial of the personal injury case of Baldwin vs. Lincoln County attempt was made to show that the person to whom the party suing went for treatment was not a licensed practicing physician or surgeon, and that the party knew that fact, and that the medical treatment received by him was unskilful, and that the injury resulting to him was therefore greater than it otherwise would have been. The county conceded that on receiving his injuries he was bound to obtain timely medical assistance, in order to reduce the damages suffered as much as possible, and that it was his duty to see that his injuries were attended to with dispatch, and to seek the nearest competent physician. The injured party having used ordinary care in this regard, the court goes on to say, could not be held to assume the liability of improper treatment. The converse of the rule must maintain, also, that if the injured party was negligent in the employment of a competent physician, or employed some person whom he knew to be incompetent, when competent physicians were accessible, and improper treatment was resorted to, and the injuries thereby greatly increased, these facts might be shown in mitigation of damages. These facts were facts to be determined by the jury from the evidence. The trial judge on this question very properly, the court thinks, instructed the jury that it is the duty of the person who has sustained personal injuries for which another is liable to secure timely medical or surgical aid, in order to reduce the liability of the party causing the injury. In selecting a physician he is only charged to use ordinary care and judgment. If the party suing used ordinary care and judgment in selecting a physician, considering the circumstances of the case, the liability of the county would not be changed, if the county was found liable; nor would the amount of recovery be reduced, even though it should be found that the physician did not perform his work skilfully.

Releases in Injury Cases—On Statement of Physician.—The United States Circuit Court of Appeals, Eighth Circuit, says, in Chicago & Northwestern Railway Company vs. Wilcox, a personal injury case brought by the latter party, that, in the absence of fraud or mistake, an agreement of settlement and release of an unliquidated or disputed claim as conclusively debars the parties from reviving and litigating it as a final judgment. Such agreements of compromise are uniformly favored and upheld by the courts. A mere preponderance of testimony is insufficient to establish such fraud or mistake as will warrant the avoidance of a written agreement of settlement and release. The proof must be clear, unequivocal and convincing to have this effect. A mistake of a past or present fact may warrant a rescission of a contract of settlement and release. But a mistake in opinion or belief relative to the future duration or effect of a personal injury, or a mistake in prophecy or opinion as to an uncertain future event, is not a mistake of fact, and is no ground for the avoidance of a release or of a contract of settlement. The complainant in this case, who was 65 years of age when injured, compromised and released a claim for a broken hip. She knew when she settled that her hip had been broken; that it was a bad break; that the neck of the femur was fractured. She was induced by the statement of her own physician, who was also the company's physician, to believe, and did believe, that she would be well within a year, and she settled on that basis. She was mistaken, and her injury and disability turned out to be permanent. The court holds that her mistake was not a mistake of fact, but a mistake in opinion or belief as to a future event, and that it furnished no ground for an avoidance of her release. Again, it says that it is common knowledge, with which all must be charged, that the future effects of a broken bone are uncertain, contingent on many conditions, and unknowable. The physical and mental condition of the sufferer, the state of his vital organs, his age, his habits of life, the character and temperament of his nervous system, and many other conditions that it is impossible to enumerate or even to conceive, inevitably affect the duration and the character of his disability and the amount of his suffering. Ignorance of the duration of the disabilities and of the ultimate effects of the injuries always exist where compromises are made before a complete recovery is effected. The cases are doubtless rare where the duration of the disability corresponds with the prophecy of the physician or with the belief of the parties when settlements are made. But compromises and releases are not voidable on this account, for the reason that the parties to them know the uncertainty of these future events, and by the very fact of settlement before they develop agree to take the chances of their effects. Their mistakes relative to the future duration of the disabilities and the future effects of the personal injuries that form the subjects of their contracts are mistakes of belief, and not of fact, and form no basis for the avoidance of their contracts. Such was the mistake under which the complainant in this case labored. It was a mistake in the opinion of the doctor, and in the belief of his patient with reference to unknowable future events, and presented no ground for a rescission of her release.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Philadelphia Medical Journal, October 11.

1 •Gastroptosis: A Method of Suspending the Stomach in a [illegible] Made of the Great Omentum. R. C. Coffey.
2 [illegible] lliam A. Edwards.
3 [illegible] to Man Through Meat and Milk?
4 •Severe Burn of the Eye and Face by Nitrite of Amyl, with Loss of the Eye. Edward A. Shumway.
5 Extensive Destruction of the Nasal Septum, with Involvement of the Accessory Sinuses, from Sepsis. Charles I. Buringer.

New York Medical Journal, October 11.

6 The Evolution of Urology, an Opening Address Delivered at the Annual Meeting of the American Urological Association (To be concluded.) Ramon Guiteras.
7 •The Indications and Limits for Operations by the Vaginal Route. C. C. Theinhaus.
8 •The Silent Forms of Epilepsy. William P. Spratling.
9 •The Constitutional State Versus Catarrhal Deafness. Sargent F. Snow.
10 •Septicemia and the Curette. H. Plympton.
11 A Contribution to the Treatment of Spasmodic Wry Neck. George R. Elliott.

Medical News (N. Y.), October 11.

12 •The Teaching of Surgery; with Especial Reference to Didactic Method. Joseph D. Bryant.
13 Contribution to the Diagnosis of Renal Calculus. Frederic Bierhoff.
14 •The Criminal Equivalent of Insanity. Wm. B. Noyes.
15 Apocynum Cannabinum in Some Dropsical Conditions. M. I. Hildreth.
16 The Etiology of Shock. H. H. Stoner.
17 •How Much Do We Positively Know About Tuberculosis? A Plea for the Tuberculous. F. C. McGahey.
18 An Instance of Accidental Vaccination. Geo. W. Kosmak.

American Medicine (Philadelphia), October 11.

19 •The Pathology of Chronic Specific Dysentery of Tropical Origin. Charles F. Craig.
20 Types of Infection Produced in Man by Intermediate Members of the Typhoid colon Group of Bacilli. (Continued.) Warren Coleman.
21 •Immunity in the Light of Recent Investigations. D. H. Bergey.
22 •Brewers' Yeast in Therapeutics. Julius Ullman.
23 An Additional Case of Typhoid Spondylitis. Albert H. Freiberg.
24 Idiopathic Vaginismus and Sterility. E. Castelli.
25 Professor Nicoladoni's Clinic, Gratz. Nicholas Senn.

Boston Medical and Surgical Journal, October 9.

26 •Ultimate Results of Operations for Appendicitis. Homer Gage.
27 Chronic Laryngeal Obstruction Due to Enlargement of the False Cords; Tracheotomy; Later Partial Excision of False Cords. L. R. G. Crandon.
28 •The Modern Operation for Radical Cure of Umbilical Hernia. W. H. Conant.
29 Sensory Hallucination and Its Analogues. (Concluded.) Robert MacDougall.
30 Massage in Fracture Treatment. Edward A. Tracy.

St. Louis Medical Review, October 11.

31 Phantom Tumors. M. E. Fitch.
32 Tubercular Peritonitis. T. E. Potter.

Cincinnati Lancet-Clinic, October 11.

33 Surgery of Prostate, Pancreas and Diaphragm. B. Merrill Ricketts.
34 •Preventive Dentistry. C. M. Wright.
35 Tuberculosis—Truths Calmly Considered. H. H. Spiers.
36 •Septicemia and the Curette. H. Plympton.

Medical Record (N. Y.), October 11.

37 •The Prominent Eye—Its Meaning and Clinical Associations. A. Haig.
38 Resection of Nearly Eight Feet of Gangrenous Intestine—Recovery. George R. Harris.
39 •Making and Closing the Median Celiotomy Wound. Augustin H. Goelet.
40 Sensation and Volition. Herman Gasser.
41 •The Glycerophosphates; Particularly the Glycerophosphate of Sodium. P. W. Street.
42 •Malarial Infection a Potent Factor in Asthenopic Conditions. J. Lawton Hiers.
43 •The Use of Argyrol in the Treatment of Acute Gonorrhea. G. K. Swinburne.
44 A Case of Raynaud's Disease Occurring in a Patient Suffering from Graves' Disease. S. W. Thompson.

Northwestern Lancet (Minneapolis), October 1.

45 The Prostate from the General Practitioner's Standpoint. John B. Murphy.
46 The Marburg Experiments. C. H. Hunter.
47 Empyema, with Report of Cases. Emery H. Bayley.

Louisville Monthly Journal of Medicine and Surgery, October.

48 Hemorrhage in Typhoid Fever. •R. Alexander Bate.
49 Remarks on Appendicitis. A. H. Barkley.
50 A Consideration of Acute Inflammatory Rheumatism. Hugh L. McLean.
51 Infantile Disturbances. Sidney J. Meyers.
52 Importance of Diagnosis. F. L. Bott.
53 How to Assist Young Girls to Womanhood. Edward C. Hill.

54 Address of Welcome to the Ohio Valley Medical Association. Jacob Glahn.

Journal of Cutaneous and Genito-Urinary Diseases (N. Y.), October.

55 Presidential Address: The American Dermatological Association, and Its Work During Its First Quarter of a Century. George T. Jackson.
56 Two Cases of Malignant Vascular Tumor (Perithelioma) of the Skin. Paul G. Woolley and E. Hamilton White.
57 Fatty Degeneration of the Bladder as a Factor in the Pathology of Genito-Urinary Disease in Middle and Advanced Life. G. Frank Lydston.
58 Dermatological Cases (Zoster Glossitis). Max Reichman.

American Gynecology (N. Y.), September.

59 *Hypertrophies of the Labia Minora and Their Significance. Robert L. Dickinson.
60 A Study of Uterine Fibromyomata, with Especial Reference to Their Degenerations and Complications as Furnishing Reasons for Early Operations. Carlton C. Frederick.
61 *Address, American Gynecologic Society. Seth C. Gordon.
62 The Surgical Treatment of Retrodisplacements of the Uterus. William D. Haggard.
63 *Pelvic Suppuration. A. J. Puls.

Toledo Medical and Surgical Reporter, October.

64 What Should Be Done During Labor? William Cherry.
65 The Sprained Ankle. J. T. Woods.
66 A Case of Tetanus with Recovery. S. Ellis Demuth.
67 Gonorrheal Rheumatism. J. Douglas Westervelt.

Buffalo Medical Journal, October.

68 Defects in, and Suggestions for the Improvement of the Reports of Examining Surgeons. J. F. Raub.
69 Blood in Its Relation to Surgical Diagnosis. A. E. Woehnert.
70 *The Treatment of Insomnia of Pulmonary Tuberculosis. S. C. Reisman.
71 Menstruation—Normal and Abnormal. C. A. Button.
72 Intratracheal Medication. Edgar A. Forsyth.

International Journal of Surgery (N. Y.), October.

73 Diagnosis of Prolapse of the Kidney and Method of Fixation. Augustin H. Goelet.
74 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
75 Summary of Thirteen Operations upon the Gall-Bladder and Bile-Ducts. Eugene A. Smith.
76 The Surgical Assistant. (Continued.) Walter M. Brickner.
77 The Technics of Amputations. R. H. Cowan.
78 Report of a Case of Carcinoma Cured by Arsenious Acid, After Failure of Other Methods of Treatment. Leonard C. Hull.

Illinois Medical Journal (Springfield), October.

79 *Report of Ninety Cases of Typhoid Fever in Infants and Children. Isaac A. Abt.
80 *Control of Vaccines, Antitoxines and Biological Products. Adolph Gehrmann.
81 Miliary Tuberculosis. Frank X. Walls.
82 What Shall We Teach the People in Regard to Tuberculosis? Geo. W. Webster.
83 The Limitations of Surgery in Gynecology. O. B. Will.

St. Louis Courier of Medicine, October.

84 The Cecum: In Relation to the Psoas Muscle in 310 Adult Male and 125 Adult Female Autopsies. Byron Robinson.
85 Two Contrasted Cases of Typhoid Fever. George Homan.
86 Infective Cellulitis. Charles G. Geiger.
87 The Vessel Phenomena in Aortic Regurgitation and Aneurism. Elsworth Smith, Jr.
88 The Protective Proteids in Vaccination. A. S. Bleyer.

Brooklyn Medical Journal, October.

89 *Vioform: Researches Concerning Its Properties, with Especial Reference to Its Possible Use as a Substitute for Iodoform in the Treatment of Tubercular Joints. James E. Blake.
90 Modern Views of Diabetes Mellitus. Joshua M. Van Cott.
91 Eclampsia: Etiology, Symptomatology, Diagnosis, Complications, Prognosis and Therapeutics. A. M. Judd.
92 *The Present Status of the Pathology and Etiology of Eclampsia. C. L. Fincke.
93 *Temporary Modified Intubation of the Larynx, as an Aid and Safeguard in Operations in the Mouth and Pharynx. Rubert S. Royce.
94 *A Phase of Surgical Tuberculosis. A. T. Bristow.
95 *The Infectiousness of Tuberculosis. Archibald Murray.

Oklahoma Medical News-Journal (Oklahoma City), August.

96 Leukemia. Ed. E. Rice.
97 Cholelithiasis, Treatment of. J. S. Hibbard.

September.

98 Surgery of the Gall-Bladder and Ducts. A. L. Blesh.

Medicine (Detroit, Mich.), October.

99 The Diagnosis of Diabetes Mellitus and the Urinary Findings in This Disease. D. L. Edsall.
100 *Some Aspects of the Present Smallpox Epidemic. John C. Hancock.
101 *Tuberculosis of the Testicle and Epididymis. Irvin Abell.
102 Methods of Prolonging Life—A Brief Historical Sketch. Lawrence Irwell.

Woman's Medical Journal (Toledo, Ohio), September.

103 The Better Preparation of Our Women for Maternity. Josephine Wetmore.
104 Sterility in the Female and Its Curability. S. L. Kistler.
105 Ills and Treatment Peculiar to Children. Mary Newell.
106 Etiology and Pathology of Pott's Disease of the Spine. Lucy M. T. Wanzer.

Pennsylvania Medical Journal (Pittsburg), September.

107 *The Surgical Aspect of Pain Occurring in the Epigastric Region. O. C. Gaub.
108 *Some Observations on Neurasthenia. Theodore Diller.
109 Gastric Neurasthenia. G. E. Humphrey.
110 A Rare Case of Delayed Union of the Tibia and Fibula. Walter H. Parcels.
111 Atonic Dilatation of the Stomach with Report of a Case. T. Wray Grayson.
112 A Case of Infected Extrauterine Pregnancy. Mark A. Rodgers.
113 The Use of Anesthetics by the General Practitioner, with Special Reference to Chloroform. J. Pierce Roberts.

Medical Age (Detroit, Mich.), October 10.

114 Progress of Diseases of the Nose. B. A. Waddington.
115 Is the Medical Fraternity Guilty of Professional Neglect of Its Vaccinated Patients? L. T. Schurrer.
116 The Physiology of Feeling. Herman Gasser.

Journal of Nervous and Mental Diseases (N. Y.), October.

117 *A Study of Landry's Paralysis; With a Report of Three Non-Fatal Cases. Theodore Diller.
118 *Note on Cell Changes in a Case of Complete Compression of the Cord. John J. Thomas.
119 A Case of Severe Hysterical Contracture of the Leg, and Its Treatment. Frank R. Fry.
120 *Pseudo-epilepsies, and the Relief of Some Forms by Thyroid. William Browning.
121 A Case of Tumor in the Cerebellum; Autopsy. O. T. Osborne.

The Post-Graduate (N. Y.), October.

122 Obstetric Cases of Interest. George L. Brodhead.
123 Cyst of the Urachus, with Report of a Case. Charles C. Page.
124 Examination of the Secretions of the Mouth and of the Gastric and Intestinal Contents. Hermann Lenhartz.
125 Tuberculosis of the Knee-Joint, Its Diagnosis and Treatment. Charles Ogilvy.
126 Acute General Gonorrheal Peritonitis. C. R. L. Putnam.

Medical Review of Reviews (N. Y.), September 25.

127 Subcutaneous Injection of Paraffin in the Correction of Facial Deformities. Harmon Smith.

Southern Practitioner (Nashville, Tenn.), October.

128 *More About the Rectal Valves—A Brief Consideration of Their Physiology and Pathology. A. B. Cooke.
129 *The Physiology of Fever. Perry Bromberg.
130 Hysterectomy for Cancer of the Uterus. T. J. Biggs.

The Laryngoscope (St. Louis), September.

131 *Chronic Suppurative Otitis Media—When Should Radical Surgery Be Employed in Its Treatment, and of What Should This Consist? George L. Richards.
132 *Constitutional Manifestations Due to Infectious Processes of the Adenoid Structure in Children. D. Braden Kyle.
133 The Best Means of Removing Nasal Obstructions, with Report of 264 Cases. J. W. Murphy.
134 A Case of Epithelioma of the Larynx, Thyrotomy, Recurrence and Death in Four Months. Charles H. Knight.
135 A Novel Feature in the Treatment of Tubercular Laryngitis, with Recital of a Presumably Cured Case. F. L. Stillman.
136 A New Folding Tongue Depressor. Henry W. Wandless.
137 On the Use of Hot Air in Eustachian Catheterization. J. F. Oaks.

Hot Springs Medical Journal, September.

138 Excision of the Knee for Chronic Rheumatism. Theodore A. McGraw.
139 Vesicular Mole, or Fatty and Cystic Degeneration of the Product of Conception. W. P. Dunbar.

Texas Medical Journal (Austin), October.

140 Serum Therapy. H. N. Graves.
141 Tinea Sycosis; with Report of Case. Alexander A. Brown.

Carolina Medical Journal (Charlotte, N. C.), September.

142 Prostatitis. A. J. Crowell.
143 Inebriety—The Necessity of Legal Adjudication and Restraint of Inebriates. Charles Duffy.
144 Agurin, a New Diuretic. F. Carbonell y Soles.

Vermont Medical Monthly (Burlington), September 25.

145 The Etiology of Typhoid Fever. James M. Hamilton.
146 Pathology of Typhoid Fever. O. W. Sherwin.
147 The Clinical History of Typhoid Fever. John W. Avery.
148 Diagnosis of Typhoid Fever. J. D. Brewster.
149 The Complications and Sequels of Typhoid Fever. D. L. Burnett.
150 Treatment of Typhoid Fever. J. N. Jenne.
151 *Puerperal Septicemia and the Abuse of the Curette. H. Plympton.
152 The Sending of Medicolegal Material Through the Mail with Presentation of a New Mailing Tube. C. S. Scofield.

Medical Standard (Chicago), October.

153 A Gynecologic Clinic. (Prolapsus Uteri, Retroflexion and Cystocele.) Thomas H. Watkins.
154 Practical Dietetics. (Continued.) A. L. Benedict.
155 The Commoner Diseases of the Eye: How to Detect and How to Treat Them. (Continued.) Casey A. Wood and Thomas A. Woodruff.
156 Landmarks in the Tractus Genitalis. Byron Robinson.
157 The Evolution of Death. Herman Gasser.
158 Pain and Its Indications. E. C. Hill.

Medical Bulletin of Washington University (St. Louis), September.

159 Operation for the Deflection of the Nasal Septum. Charles A. Todd.
160 Hypertrophic Pyloric Stenosis in Infants—With a Report of Two Cases. Ending in Recovery. John Zahorsky.
161 Acute Osteomyelitic Arthritis of Infants. Phil. Hoffmann.

1. **Gastroptosis.**—The operation recommended by Coffey consists in making a hammock or loop of the great omentum and thus suspending the stomach as indicated in the title of his article. The paper is quite fully illustrated, and he remarks that the principal point to be known is that it does not do harm to suture the omentum to the abdominal wall at any point the operator may see fit. It is a good precaution, however, to avoid omental blood vessels. His conclusions are as follows: Gastroptosis is far more frequent than has been suspected. Dilatation is probably in most cases due to gastroptosis, and gastroptosis with dilatation, having once begun, produces a weight which its normal direct support will not sustain, so the position increases the dilatation, and the dilatation in turn increases the weight, and the patient inevitably grows worse. The operation suggested is that of suspending the stomach by giving it additional support through the posterior attachment of the mesocolon and the anterior attachment of the great omentum to the abdominal wall. Both of these are indirect and are capable of holding more than a direct attachment, like the one from above. Dilatation in the majority of cases will be relieved by this operation. The transverse colon being in the folds of the great omentum can not be displaced downward, therefore this operation will greatly benefit, if not entirely relieve enteroptosis by supporting the weight which would otherwise be pressing the small ntestines into the pelvis. In case of splanchnoptosis with a ery much relaxed abdominal wall or separation of the recti uscles, the operation devised by Webster should be done in losing the abdominal wound.

4. **Nitrite of Amyl.**—Shumway's case is peculiar in that shows an irritating effect of nitrite of amyl, which is not oted in text-books. Careful examination seemed to confirm e fact that it was this drug that produced the effect. It is ade by the action of nitrous or nitric acid on amylic alcohol, fusel oil. It rapidly decomposes under light, producing lerianic acid; valerianate of amyl and fusel oil are formed at the same time. This was the cause of the accident, and it was probably a fact that the substance had decomposed and that it consisted largely of a mixture of nitrous or nitric acid, to which the *burn* was due. He offers in conclusion the following suggestions: "1. Nitrite of amyl should be supplied to patients, for inhalation, only in the form of the glass pearls. 2. When in quantity, it should be kept in small, well-sealed, glass-stoppered bottles, in a cool, dark place. 3. A specimen which has been used a number of times should be tested very carefully and, if on examination it is found to have a decidedly acid reaction, it should be at once discarded."

7. **Vaginal Operations.**—Thienhaus holds that the vaginal operation is to be employed in quite a number of cases, especially in inflammatory processes about the adnexa, in the uterine prolapses with or without cystocele, in retroversion and retroflexion, in extra-uterine pregnancy, etc. He says in conclusion that two requirements are necessary for surgery by the vaginal route: "1. Greatest care in diagnosis and judgment in the selection of cases. 2. Absolute familiarity, as well theoretically as practically, with all abdominal operative procedures on the female sexual and adjacent organs, because the necessity may arise (though very seldom in the hands of experts) of resorting to the combined vaginal and abdominal methods of operation. It must not be forgotten that almost all surgeons who now ardently *advocate* the vaginal route have performed in former years *almost all* of their work by abdominal section, and when the results gained by the vaginal operations taught them the unquestionable great advantages of this route concerning the immediate and remote results of their operative procedures and concerning the safety of their patients, they came *gradatim* to the conclusions of Fritsch and Thorn, that it must be our principle what we *can* operate on by the vaginal route *must* be operated on by this route."

8. **Epilepsy.**—The form here considered under the name of "silent" forms of epilepsy are mental seizures which occur sometimes in individuals, and are due to some disturbance in the purely mental functionating process of the cortex. Such cases often go unrecognized for years, are not infrequent, and are of great importance both from a medical and medicolegal standpoint. His objects in calling attention to this form are: "1. To help stimulate the spirit of investigation in medical jurisprudence that has for its object the placing of responsibility for crime where it rightly belongs; 2, the proper medical care of persons who have this very obscure and often unrecognized affection, while the malady is yet in its most benign stage."

9. **Catarrhal Deafness.**—The importance of treating the constitutional condition in cases of catarrhal deafness is insisted on by Snow, who says that it is virtually impossible to handle a case of chronic catarrhal deafness where there is low vitality, a sensitive skin, or frequent functional derangements, whereas without these obstacles a correction of morbid nasal conditions makes the disease, as a rule, non aggressive and capable of much improvement.

10.—See also ¶36 and ¶151, below.

12. **Teaching of Surgery.**—According to Bryant's views "1, a thorough didactic foundation is absolutely necessary for the proper attainment of surgical knowledge; 2, that clinical teaching fits the student for the intelligent use of didactic facts; 3, that didactic teaching with limited clinical opportunity begets ponderous theorizing with a minimum of fertile practicability; 4, that clinical teaching with limited didactic opportunity begets much of unreasoning imitation with limited logical deduction."

14. **Moral Insanity.**—Noyes describes cases which are of medicolegal interest and discusses the criminal phase of insanity and its medicolegal standing.

17. **Tuberculosis.**—McGahey combats the popular notion as to the extreme contagiousness of tuberculosis, giving as examples cases among the Indians in the Government Indian schools, who are specially liable, and yet no cases have originated from contagion from them. He remarks that he is not combating antiseptic measures for its prevention, but he thinks too much is made of the bacillus as a directly contagious germ.

19. **Chronic Specific Dysentery.**—The symptoms and pathology of this disease have been studied in detail by Craig, who, in conclusion, remarks in regard to the bacteriology, that in the chronic form described all classes of bacteria are found and to isolate and determine the one real cause is difficult. While he has not been able to obtain cultures of Shiga's bacillus in most cases coming to autopsy, he has used the pure culture of this bacteria in testing the action of blood-serum of these cases, and in all obtained a marked agglutination. This reaction was not present in cases of amebic dysentery so far as he was able to discover. The bacteria are most numerous in the gangrenous stage, less so in the follicular, the micrococci in the severer stages. He remarks in conclusion that the term tropical dysentery indicating the amebic type is unwarranted as indicating that the amebic type is the only one occurring in the tropics. All these cases described originated in the tropics and are just as tropical as pure amebic dysentery.

21. **Immunity.**—Bergey describes the theories of immunity, more especially the later ones of Ehrlich, giving his terms, receptors and complement, the former indicating what was once known as the *immune* body, which is present only in the serum of immune animals, and is resistant to heat, the latter present in normal blood and destroyed by a low degree of heat. He remarks in regard to the lack of influence of specific bactericidal serum that it may be explained by the fact that the human complement does not compare in its configuration with the haptophore of the immune body derived from the lower animals, and consequently it can not unite with it. He offers three suggestions that have been made to overcome the inefficacy of the bactericidal immune serums: "1. The simultaneous injection of complement derived from the same species as that furnishing the immune serum. Experience has shown that there is a tendency for the complement to be utilized in the formation of anticomplement so that it becomes ineffective for this reason. 2. The employment of a mixture of immune serums derived from a number of species of animals so that in the multiplicity of immune serums the human complement may find sufficient receptors with haptophores of like configuration

to bring about the destruction of the invading microörganisms. 3. The immunization of a species of animals so closely related to man as to yield receptors with haptophores that compare with the complement in human blood. The latter suggestion appears to offer the most ready solution of the problem, but the question has not yet been decided experimentally."

22. **Brewers' Yeast.**—Ullman reviews the conditions in which brewers' years has been used in therapeutics, reporting cases, and remarks that we must conclude that because of its ferments, nuclein and nucleinic acid and phagocytic action, it is a remedy of value in therapeutics. Its use is not confined to any one disease, but it is valuable wherever an increased revalue in furunculosis, carbuncles, diabetes, tuberculosis, bronsistance of the organism is required. It has proved itself of chitis, bronchopneumonia, enteroptosis, habitual constipation, cancer and other affections. Used in cases of advanced tuberculosis an improvement in symptoms indicative of secondary pyogenic infection was noted.

26. **Appendicitis.**—Gage has endeavored to learn the subsequent history of three hundred cases of appendicitis operated on prior to Oct. 1, 1901. His belief is that there is only one kind of appendicitis and that is the kind that demands operation, and he prefers to operate promptly. He mentions his method and remarks that 35, or 15 per cent., of the 240 cases operated on during an acute attack were fatal. The percentage shows a reduction in the later series of cases. Of the 228 cases whose subsequent history he has been able to obtain, 42 have a complaint of some nature; 13 speak of trouble in the region of the scar, soreness caused by exercise, etc. One of these was so disabled that a second operation was performed, and all that was found was an adhesion of the omentum on the under side of the upper part of the scar, covering an area of not more than one-half an inch square. This was released, nothing else being indicated, but the result was perfect and complete relief. In some cases there have been persistent fecal fistulas which he can not explain, and in one case of general purulent peritonitis in which he removed a gangrenous appendix and which made an unexpected recovery, he was called on later to operate for acute intestinal obstruction. He could not ascertain the exact point of constriction, so he separated all the adhesions he could find as well as he was able and the patient promptly recovered. Nineteen, or a little less than 9 per cent., report the existence of hernia. In 9 cases there were attacks simulating appendicitis occurring after the operation, and these he briefly details.

28. **Umbilical Hernia.**—Conant summarizes his article in substance as follows: 1. Umbilical hernia in children as a general rule recovers without a truss. 2. Strangulated umbilical hernia is to be operated on like any other hernia. 3. Radical umbilical hernia should be operated on if the patient permits, otherwise a well-fitting truss should be constantly worn day and night. 4. Irreducible hernia should be operated on unless there is some marked contraindication like heart or kidney disease. Age and size of the tumor need be no bar to operation. 5. The preferable operation should combine rapidity with the diminution of shock, both by lessening hemorrhage and also the length of time under anesthesia. 6. The use of cocain is advisable where ether is contraindicated. He describes the operation in detail.

34. **Preventive Dentistry.**—Wright thinks that dentists should give more attention to the preventive part of their practice by prophylactic measures against teeth liable to disease. Caries of dentine and Rigg's disease are dependent on two classes of factors, predisposing and specific, and by prophylactic treatment by frequent polishing and massage with orange wood and pumice, adhesions will be kept away, the effects of fermentation will be obliterated, pulps and nourishing membranes will be stimulated to healthy and normal function and caries and septic gingivitis will be positively prevented.

36. **Septicemia and the Curette.**—Plympton objects to the too great use of the curette and suggests the substitution of gentle flushing of the uterine cavity with alkaline solution (110 degrees) from a moderate height, the reservoir not over two feet above the level of the hips, having first removed all loose fragments. He does not wish to be understood as condemning the use of the curette, but only the abuse of it.

37. **The Prominent Eye.**—Haig emphasizes the importance of the prominent eye as a symptom of increased blood pressure, which is the underlying cause of Graves' disease and other conditions in which this symptom is present. It not only tells us whether there is high blood pressure but often also how long it has been there and whether the heart has hypertrophied under it or has failed early or only later. We must notice not only the eye, but the condition of puffiness or wrinkling of the skin around it. He claims he can even approximately gauge the thickness of the left ventricle by the greater or lesser prominence of the eye.

39. **The Celiotomy Wound.**—Goelet advises making an incision first through the skin and down to the fascia, then retracting the parts and dividing the fascia over the rectus muscle about a third of an inch from the median line and separating the muscle with the fingers in the direction of its fibers down to the peritoneal fat, which, with the peritoneum, is opened in the usual manner. In this way he makes an incision through the muscle and lower parts a little to one side of the incision of the skin and secures a firmer line of union. In closing the wound he uses a continuous suture of No. 1 chromicized catgut throughout, tied only at the start and finish. The first layer includes the peritoneum, subperitoneal fascia and the lower border of the muscle on each side beginning at the upper angle of the wound and continuing it to the lower end. By including the lower border of the muscle with the peritoneum, the leaving of dead space between the peritoneum and the muscle is avoided. Then the same suture is continued from below upward, the fascia is united, and this layer of suture is made to include the upper part of the muscle with the fascia, thus avoiding a dead space here also. Unless the fat is unusually thick no suture will be required above the fascia, but when necessary it can be drawn together by a continuous suture, applied from above downward, the insertions from side to side being made in the direction of the incision and not transversely to it. The skin can be approximated either by a subcuticular suture or by application of aseptic adhesive straps, one quarter of an inch wide, with space between them, to permit drainage into the dressing applied over them, when a thick pad of absorbent cotton covered with gauze is applied, and held down by broad adhesive straps, across the abdomen from side to side, securing firm pressure on the wound. All bleeding vessels should be stopped before integument is approximated and ligated with No. 1 plain catgut to avoid bleeding that might prevent closure of the wound. This is necessary when adhesive straps have been used. Simple oozing is usually stopped by sponging with hot salt solution.

41. **Glycerophosphates.**—The actions of glycerophosphoric acid on various bases are noticed by Street, who especially remarks in regard to the glycerophosphates of sodium which have been most used in this country. They are very hygroscopic, and only sold in 75 per cent. solutions of water. He says that: "The glycerophosphates are indicated, and most useful in all cases of nervous impairment due to overwork, or excesses of any kind. Also in asthenic nervous maladies, mental depression, and whenever it is desired to increase the nutrition of the nerve-cells, and stimulate their activity. In neurasthenic conditions characterized by vertigo, occipital headache, unsteadiness of gait, or inability for physical or mental effort, great improvement attends their use. In the premature advance of age, and in senility, attended by general debility, the benefits from their protracted use are striking. They greatly relieve hysteria, and also the many morbid feelings of nervous patients. Their value is considerable in chronic neuralgia, in sciatica (by hypodermic injection along the nerve), and in convalescence from la grippe, and acute infectious diseases. In diabetes, Magnin of Paris asserts that he has personally seen, repeatedly, the sugar markedly diminished by them. And they are said to be useful in Addison's disease." They are contraindicated in albuminuria, in diseases with organic oxidation in excess and in the acute excitable nervous states, and their incompatibilities are lead salts, phosphates or carbonates. For

hypodermic use they can be employed according to the following formula: Phosphate of sodium, 12 gr.; sodium chlorid, ½ gr.; distilled water, 1 dram, 15 to 30 minims injected once daily antiseptically. The solution should be fresh or kept sterile. The best site for injection is in the back, as it causes some pain for a few minutes and soreness and redness for some days. On this account he objects to the hypodermic injection as a rule, and advises the remedy to be taken internally. He gives as an effectual formula: Glycerophosphate of sodium 7½ gr., 1 grain of glycerophosphate of quinin, 2 grains of glycerophosphate of iron and 1 dram glycerin, with sufficient citric acid to complete solubility. One dose, to be taken in water before each meal. To get the best results it is usually necessary to administer the glycerophosphates from three to six months, sometimes longer, though occasional interruptions of several weeks in the course of very prolonged administration are beneficial. Strychnin and proper hygiene are useful auxiliaries. Excesses and the use of stimulants, even tea, coffee or tobacco, are to be avoided.

42. **Malarial Asthenopia.**—Hiers has treated twenty cases of hypermetrophic asthenopia associated with malaria during the last four years, besides eleven without any other assignable cause. From the evidence he deduces the following conclusions: "1. That two distinct forms of malarial asthenopia exist—acute and chronic. The former is seen most frequently by the family physician, and is characterized by the eye strain, pain, and weakness of vision which accompany febrile reactions of an intermittent or remittent type. The latter more frequently falls under the care of an oculist, and may be associated with muscular or accommodative asthenopia, or both. 2. That asthenopia *per se* does not exist, but must possess some qualifying cause. 3. That the interocular and neurotic manifestations should be classified individually and not generalized. 4. That microscopic investigation can and does determine the prevalence of plasmodia in certain of the aforesaid conditions. 5. That a febrile reaction does not of necessity accompany the history of the case. 6. That under judicious anti-malarial treatment, provided the presence of hematozoa has been demonstrated, the causative factor can be readily eradicated and a permanent cure effected."

43. **Argyrol.**—According to Swinburne this drug has "decided gonococcidal powers; it has a decided effect in reducing and allaying inflammation of the disease; it can be used safely in almost any strength and at any stage of the disease; the injection can be repeated almost as frequently as the fancy of the physician dictates; I have not seen any unpleasant symptoms due to the use of the drug, and I believe it to be one of the most valuable remedies given to the profession in recent years."

59. **Hypertrophy of the Labia Minora.**—Dickinson considers that in extensive hypertrophy of the labia minora its cause may be traced to present or former masturbation.

61.—See abstract in The Journal, xxxviii, p. 1668.

63.—Ibid., July 5, p. 42.

70. **Insomnia.**—The value of hedonal is described by Reisman, who reports a case of its useful employment in the insomnia of tuberculosis. He finds it rapid and reliable in its action, non-irritating to the gastrointestinal, circulatory or genito-urinary systems, and devoid of after-effects. It does not induce habit and allays bronchial sensitiveness.

79.—Reviewed on pages 1000 and 1001 of this issue.

80. **Control of Vaccines, Etc.**—The necessity of proper testing and assurance of the quality of vaccine, serums, etc., is noted by Gehrmann, who advocates the placing of these substances in the pharmacopeia and control of them by a system of either state or national inspection.

89. **Vioform.**—This substance, iodoxychlorchinolin, is known under the trade name of vioform, and was introduced to the profession by Tavel of Berne, whose published findings on the subject are given by Blake. He also reports his own experiments with it on guinea-pigs and rabbits. He finds from the result of these studies that in consequence of its insolubility and stability it is possible that in most cases neither the powder nor its decomposition products are absorbed in appreciable quantities, even after its free use, in localities where escape of the secretions is possible. When absorption does occur in such localities, it is insufficient to produce any symptom of poisoning. When, however, it is introduced into any region where escape of the secretion is impossible, as when employed by injection, it produces an intoxication of considerable severity that may continue for weeks on account of the slow absorption of the drug. This makes it absolutely unsuitable for injection purposes, but for local application as a powder or on gauze in fresh wounds, and in old sinuses so long as they open freely to the surface, it can be freely used with advantage on account of its non-irritating qualities and freedom from toxic action. It has a higher antiseptic potency than that of iodoform, and is entirely free from the offensive and tell-tale odor. Hence Blake considers it for all purposes except that of injection an ideal substitute for iodoform.

92. **Eclampsia.**—Fincke holds that we have as a foundation for the etiology of eclampsia certain fairly definite pathologic lesions, consisting mainly of hemorrhagic and anemic areas, multiple cellular necrosis, and the formation of thrombi and emboli in the various organs, but most marked in the liver, these changes corresponding in general with those caused by the circulation in the blood of some of the toxins. Eclampsia is, therefore, a toxemia due to some undiscovered agent, present under certain unknown conditions in the body at the time, just before, during or shortly after labor. This causal factor may be bacterial, it may be of placental or fetal origin, may arise from faulty metabolism with absorption of resulting poisons, or the abnormal absorption of normal metabolic products. Diseased organs may predispose to but can not cause this condition, while the pathologic findings are the result and not the cause of the clinical syndrome.

93. **Surgical Intubation of the Larynx.**—Royce suggests in cases of operation on the pharynx to avoid the inspiration of blood and the extra dangers and difficulties of the anesthetic from this and other causes, the use of a laryngeal intubation tube fitted with a thin, tightly-fitting tube inside, extending above it, and lengthened by a rubber tube protruding out of the mouth and terminating in a cornucopia lightly filled with cotton, on which the anesthetic is dropped. This allows the operator to work uninterrupted by the anesthetic, and whatever blood may fall into the pharynx is washed away or washed out by irrigation without any disturbance of respiration as the tube with its flexible extension blocks all entrance to the respiratory tract except through the free end under the control of the anesthetist. (See abstract of Kuhn's article, The Journal, October 11, p. 915.)

94. **Tubercular Glands.**—Bristow insists on the importance of thorough operation for tubercular glands, implying by this complete removal of all tuberculous masses within reach.

95. **The Infectiousness of Tuberculosis.**—From study of the literature which is here reviewed, Murray draws the following conclusions: "1. That bovine tuberculosis is easily conveyed from cattle to cattle. In other words, tuberculosis developing in cattle is derived from previous cases of the disease in other cattle, and for all practical purposes other modes of infection may be neglected. 2. That human tuberculosis is transmissible to cattle, but the natural infection of cattle with human bacilli must be of very rare occurrence. 3. That bovine tuberculosis can be transmitted to man either through wounds or through the digestive tract, and, in the case of infants particularly, infection from tuberculous milk probably occurs more frequently than was formerly supposed. 4. That dried tubercular sputum is the main source of infection for man, and the most frequent method of infection is by inhalation. 5. That Koch's conclusions regarding the transmission of bovine tuberculosis to man are not proved, and with our present knowledge we are not justified in relaxing our efforts to stamp out the disease by all possible means."

100. **Smallpox.**—The history of the recent smallpox epidemic is reviewed by Hancock, who notes the symptoms and peculiarities of the attacks and also the treatment. An interesting point in his paper is that he has experimented on four

cases with a subdued red light. In one case the patient died with severe pharyngeal symptoms. The others seemed to be greatly benefited by the treatment and the cosmetic effect was excellent.

101. **Tuberculosis of the Testicle.**—In the conclusion of his paper Abell offers the following deductions: "1. The epididymis is the most frequent starting-point of urogenital tuberculosis. 2. It is usually secondary to some other focus, but may be a primary deposition. 3. The testicle is rarely primarily affected, but as a rule secondarily so from the epididymis. 4. When the epididymis is primarily infected through the blood-supply the process is probably intertubular. 5. When it is secondary to other foci in the urogenital tract, constituting a descending infection, the process is probably intratubular. 6. Foci in other portions of the genital tract, or even distant lesions, do not necessarily contraindicate operation, since clinical evidence proves that, when operated early, foci in the genital tract recover as a rule, and healing of distant lesions following operation has been noted in a sufficient number of instances to invite further investigation. 7. Castration should be limited to those cases in which the process has invaded the testicle proper. 8. Epididymectomy with high resection of the cord after the method of Villeneuve is to be practiced in all other cases."

107. **Epigastric Pain.**—Gaub reports a number of cases illustrating the different causes of pain in the epigastric region, including malignant disease of the pylorus, pyloric obstruction, appendicitis, cholecystitis, etc. He remarks that pain is Nature's method of sounding an alarm, and when occurring in the epigastric region is extremely significant owing to its many possibilities. We should be extremely suspicious of pain occurring in this region and examine carefully. If chronic atrophic gastritis is present and not relieved by approved treatment in three weeks, and there is the least suspicion of cancer, exploratory laparatomy should be done.

108. **Neurasthenia.**—Diller's article is an elaborate one, treating the whole subject of neurasthenia very satisfactorily within its limits. He lays special importance on heredity and over-strain, which combined are causal factors in most cases. As for treatment he suggests rest, but the Weir-Mitchell method is only applicable and feasible for a very few extremely severe cases. The ordinary case must be treated without absolute idleness and with a certain amount of variety. Much depends on the moral influence of the doctor, who must first get his patient in the proper state of mind to co-operate with him and then try to remove the cause. Drug treatment is secondary, though still of value. All the cases should be treated without drugs for at least a part of the time, and sedatives and hypnotics be given as sparingly as possible and never for long periods. General tonics, such as arsenic, iron, quinin, nux vomica, etc., are of use. The so-called tissue builders of the manufacturing chemists are very delusive, and should never be used, as are also the secret lymphs and so-called "predigested" foods.

117. **Landry's Paralysis.**—Diller reviews the literature of Landry's paralysis, holding that it is a term that can not be dropped and while not a disease in the sense that tetanus or smallpox are diseases, it is at least as much of a disease as certain others, for instance, cerebral paralysis of childhood. For a definition he would suggest the following: "Landry's paralysis is an infection or toxemia produced by various poisons in which the spinal cord (including the bulb) and the peripheral nerves, and especially the lower motor neuron, are attacked, and in which parenchymatous degeneration, hemorrhagic and inflammatory exudates of various kinds and degree are usually found postmortem in this portion of the nervous system. But in a few cases no postmortem changes are discoverable, and in still others changes which are inadequate to explain the symptoms. The spleen and lymph glands are usually enlarged. Bacteria of various kinds have, in a considerable number of cases, been found in the central nervous system; but in the great majority of cases a careful examination has failed to discover any microörganisms. The male sex is affected much more commonly than the female. No age is exempt." He would employ the term as most authorities employ the term apoplexy, including under it conditions like multiple neuritis, or poliomyelitis and some toxemias with negative postmortem findings.

118. **Compression of the Cord.**—Thomas reports a case of upper dorsal tumor of the dura producing complete compression of the cord, with absolute paraplegia, the formation of marked contractures, entire loss of all forms of sensation, and loss of the control of the bladder and rectum, which condition lasted for thirteen years. There was a general smallness of the cord below the point of compression, and the usual systemic degeneration of the pyramidal tracts, also changes in the gray matter in the lumbar enlargement. The conclusions seem to be that central chromatolysis, and nuclear changes of quite a severe grade may occur in the nerve cells of the ventral horn when interruption of conduction from the brain of motor impulses has been cut off for a long time, and in spite of this interruption of conduction from the central neurons, the peripheral nerve cell may retain its normal cytoplastic appearance for many years. The inference is that recovery from the symptoms produced by compression of the cord from without, as from a tumor of the dura, is probably possible as far as preservation of the peripheral neurons is concerned, long after the entire loss of any hope of recovery of the central neurons after removal of the compression.

120. **Pseudo-Epilepsies.**—Browning describes cases from which he summarizes as follows: "1. In the young there occurs a class of cases characterized by recurrent attacks of heterogeneous type, and that may conveniently be called "pseudo-epilepsy." 2. This form of trouble is curable. 3. Such cases, so far as here studied, are due to, or associated with, disturbances in the general tissue metabolism of the body. 4. Some of these are in whole or in part of rachitic origin. 5. Troubles of this kind, when due to rachitis, are amenable to thyroid treatment. 6. True epilepsy is not remedied by thyroid, even in a person who was once rachitic. 7. It is evident that in many cases there is a closer relationship between rachitis and athyreosis than has heretofore been recognized. There must be a relative inadequacy of the thyroid function in these cases associated with rickets. Either, as one of my cases indicates, there is a serious impairment of the activity of the gland, or thyroid feeding serves to burn up harmful material at large in the system."

128. **Houston's Valves.**—The physiology of these structures is explained by Cooke that they are essential to meet the condition induced by the erect posture in the human individual. Their pathology is chiefly in hyperplasia and fibrosis. He specially recommends Pennington's apparatus for operation for the relief of morbid conditions of these structures.

129. **The Physiology of Fever.**—The processes of fever as a disturbance of metabolism are summarized by Bromberg in the following: "1. An increase in the discharge of carbon dioxid due to increased combustion. 2. An increased elimination of heat from the skin by radiation and evaporation, which is 40 per cent. greater than in health. 3. An increase in the elimination of nitrogen and nitrogenous substances. 4. The disappearance of glycogen from the liver, which has been used up to support this increased combustion, and which can not be replaced by the addition of glycogen-forming substance to the diet, and last, an increased consumption of proteids and fats. All of the various conditions just noted have their special significance and require a thorough understanding in order to correctly apply remedies to the alleviation of these changed conditions. I regret that I have not the time to enter more fully into the changes occurring in this faulty metabolism, but to do so would require a paper of greater length than we have just read. Having promised in the commencement of this paper to attempt a definition, I will say that fever is a disorder of tissue metabolism, attended with a rise of internal temperature and changed conditions of the superficial blood vessels."

131. **Otitis Media.**—Richards advocates operation in nearly all cases of chronic suppurative otitis media, and prefers the radical operation according to the method of Zaufall in preference to ossiculectomy. The latter should be chosen only when

the probability is that the suppurative process is limited to the ossicles and their immediate vicinity and cholesteatomatous masses are not present.

132 **Adenoids.**—Kyle describes the constitutional symptoms, especially the mental condition noticed by Harrison, Allen and Cohen, and the febrile attacks in young children which may suggest typhoid or pneumonia, which he thinks are due to these growths.

151 —See ʃ36 above

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest

British Medical Journal (London), October 4.

1 *The Treatment of Wounds in Naval Actions Gilbert Kirker
2 The Duties of Medical Officers in Connection with a Naval Action W J Colborne
3 *A Discussion on the Prevention of Scurvy. A Turnbull.
4 Voluntary Aid to the Sick and Wounded in War, with Special Reference to Hospital Orderlies G A Hutton
5 *The Treatment of Abdominal Wounds C. Roberts
6 *A Few Observations Mainly Concerning the Red Cross Badge Deputy Inspector General Porter.
7 Consumption in the Navy Gerald Sichel.
8 The Position of the Volunteer Regimental Medical Officer. A E Larking
9 The Brigade Medical Unit P B Giles
10 Reform in the Army Medical Service J. B Hamilton
11 An Ambulance Stretcher C. Mansfield
12 Contract Medical Fees in Hydropathic Hotels. A H *Bampton*
13 A Discussion on Contract Medical Practice B W Housman
14 Coventry Public Medical Service as a Model for the Regulation of Professional Contract Work W. R Rice
15 The Preliminary General Education of Medical Students *William Gordon*
16 Better Organization of Medical Relief C S *Loch*
17 *Hospital Abuse and Its Effect on the General Practitioner. E H T Nash
18 Reform in Hospital Management D E Anderson
19 The Organization of a Political Bureau in the British Medical Association Victor Horsley
20 Medical Unions How to Form Them, and How to Maintain Them Edward Jepson
21 Hints on Local Medical Organization J H Hunter
22 Vaccination Acts—1867 to 1898 R F Tomlin.

The Lancet (London), October 4.

23 The Power of Observation in Medicine Thomas T Whipham
24 Advance in Surgery During Thirty Years A W Mayo Robson
25 Knowledge and Wisdom in Medicine Dyce Duckworth
26 *The Medical Treatment of Appendicitis James Burnet
27 *Myelopathic Albumosuria T R Bradshaw
28 Multiple Typhoid Abscesses, Secondary Hemorrhage; Ligature of Profunda Femoris, Recovery Herbert C Jonas
29 Notes on Three Cases of Inoperable Cancer of the Breast Treated by Removal of the Ovaries D'Arcy Power

Intercolonial Medical Journal of Australasia (Melbourne), August 20.

30 The Causation and Probable Pathology of Fibrinous Bronchitis J R Harris

Indian Medical Gazette (Calcutta), September.

31 Epidemic Malta Fever in Assam
A Short Preliminary Notice of Certain Recent Discoveries Relating to the True Nature of Kala azar Charles A Bentley
32 Report on Cerebrospinal Meningitis E A R Newman
33 Experiences in a Chinese Hospital T H Foulkes
34 The Inunction Treatment of Syphilis as Carried Out at Aix la Chapelle C C Barry

The Australasian Medical Gazette (Sydney), August 20

35 Perityphlitis or Appendicitis Jos C Verco
36 The Facial Nerve in *Relation* to the Radical Mastoid Operation H Russell Nolan

Progres Medical (Paris), July to September.

37 (No 27) Alimentation de la première enfance (first two years) P Budin
38 (No 29) *Du* ptosis d'origine traumatique, signification et Valeur [illegible]
39 La [illegible] n
40 (N[illegible] ourneville
I [illegible] en thérapeutique oculaire, [illegible] L Bellencontre
41 (No 34) Du diagnostic de l'hydrocéphalie fetale quand la tête reste dernière (when head remains behind). B Narich (Smyrna) (Commenced in No. *30*)
42 (No 36) Considérations sur le traitement électrique des névralgies Laquerrière
43 *Infection of Genital Passages in Women by Chronic, Non Gonococcic Urethritis in Men C Audistère—De l'infection des voies génitales de la femme par les uréthrites chron non gon de l'homme (*Commenced* in No 35)
44 (No 38) Dyspepsie appendiculaire L Longuet

Revue hebd. de Laryngologie (Bordeaux), xxiii.

45 (No 32) Ultimate Results of Operations on the Sinuses M Lermoyez—Resultats eloignés des op faites sur les sinus frontaux et maxillaires
46 (No 33) Névropathies nasales et pseudo-sinusites P. Jacques
47 (No 34.) *Local Electric Treatment of Ménière's Disease L Bayer—Traitement électrique auriculaire du syndrome Ménière
48 (No 36) Medicated Gauze Pack for Suppurating Otitis H du Fougeray—Des gazes à la quinoline naphtholée dans le traitement des otites moyennes purulentes
49 Technique du morcellement des amygdales (tonsils) Vacher and Ruault (See Nos 33 and 35)
50 (No 37) *Otitis in Diabetics L Bar—Otite moyenne [illegible] d'origine diabétique
51 (No 38) Pemphigus des muqueuses J Charles

Semaine Medicale (Paris), xxii, 39, September 24

52 *Du rôle des principaux facteurs accessoires dans l'étiologie du cancer R de Bovis (Rheims).

Deutsche Med. Wochenschrift (Leipsic), September 25

53 *Ueber die Tuberkuloseinfektion durch den Verdauungskanal (*digestive tract*) A Heller.
54 Nochmals die Tast Perkussion (palpatory percussion) W Ebstein
55 *Zur Frühdiagnose des Icterus Hamel
56 Significance of Fungi for Pathologic Alterations of the Stomach A Petterson—Zur Frage der Bedeutung der Hefenpilze für die path Veränderungen des Magens
57 Technic of Colorimetric Determination of Indican in Urine J Bouma—Ueber eine bisweilen vorkommende Abweichung bei der Bestimmung des Harnindicans als Indi[illegible] mittels Isatinsalzsäure
58 *Correction of Clubfoot J. Wieting Die Redression des Klumpfusses
59 Die Lepra auf den Marschall und Karolinen Inseln Krulle
60 *Light Treatment of Male Urethra H Strebel Lichttherapeutische Neuheiten.

Muenchener Med. Wochenschrift, September 23

61 *Zur Pathogenese des Typhus abdominalis H Schottmüller
62 *Traumatic Laceration of Valves and Aorta M B Schmidt Ueber traum Herzklappen und Aortenzerreissung
63 *Ueber traumatische Nephritis H Curschmann
64 Zur Kasuistik der traumatischen Pneumonie O Schild
65 Ueber den Bacillus des malignen Oedems R Grassberger and A. Schattenfroh
66 *Der Extensions Verband (bandage) nach Heusner H Wülfing
67 Ueber die Luxatio tibiæ anterior Brüning
68 Simple Method for Quantitative Determination of Albuminoids in Blood A Jolles—Eine einfache Methode zur quant Bestimmung der Eiweisskörper im Blute für klinische Zwecke

Prager Med. Wochenschrift, xxvii, July 31 to September 4

69 (No 31) Zur Aetiologie der Diphtherie L Zupnik
70 (No 36) *Extrauteringravidität und H[illegible] Ta[illegible] ber.
71 Zur Therapie der Cholelithiasis J. Kraus (Commenced in No 34)
72 (No 38) Fragmente menschl Schädel (human skulls) aus prähistorischer Zeit im Franzensbader Moor J. Cartellieri
73 Ueber Dysmenorrhoe und deren Balneotherapie L Fellner
74 Zwei Falle von Aneurysma der Arteria hepatica A Sommer
75 Beitrag zur Wirkungs und Anwendungsweise der Franzensbader CO₂-Bäder D Lindner.
76 Action of Mineral Waters on the Teeth L Wachtl Einiges über die Wirkung der Franzensbader Eisenquellen auf die Zähne
77 *Inhalation of [illegible] Acid in Tuberculosis A. Baumel — [illegible] Tuberculose
78 [illegible] und Gynaekologie Tauber (Critical Review.

Wiener klin. Rundschau, xvi, August and September.

79 (No 31.) *Significance of Various Sugars for Physiology and Therapeutics W N. Clemm—Ueber die Bedeutung verschiedener Zucker für Phys und Ther. (Commenced in No 30)
80 (No 32) *Dubious Sex F. Neugebauer—Interessante Fall von zweifelhaftem Geschlecht.
81 (No 33) Marasmus montanus H Goldmann
82 (No 34) The Island Climate of Austria C Clar—Oesterreichs Insel Klima
83 Adrenalin in der *Rhino Laryngologie* F. Rode (Commenced in No 33)
84 (No 35) **Chromoradiometer*. G Holzknecht—Eine neue einfache Dosirungs Methode in der Radiotherapie
85 Ueber die Behandlung accidenteller Wunden V. *Hippel* (Commenced in No 34)
86 Tests of Dermo Lamp Kattenbracker—Das Eisenlicht der Dermo Lamp bei der Therapie des Lupus und der übrigen Hautkrankheiten
87 (No 37) Treatment of Dermatoses with Lenigallol Paste W N Clemm—Ueber die Heilung vernachlässigter und scrophulöser Exantheme und Ekzeme mit mehrtägigen Lenigallolpaste Umschlägen
88 Behandlung des Ileus mit hypermaximalen Dosen Atropin Aronheim
89 Power of Quinin to Coagulate Albumin. Its great Value for Treatment of Wounds H. Marx—Zur Kenntniss der Chininwirkung
90 (No 38) Zur Diagnostik der diphtherischen Larynx Stenose I Steinhardt
91 (No 39) Ueber die Enstehung der Fistula vestibulo rectalis sub coitu primæ noctis G. Scheftel
92 Cholera Infantum und Fliegen (flies). J. Paulsen
93 Ueber den Einfluss von Gemüthsbewegungen (emotions) auf den Sympathicus M. Buch (Commenced in No 37.)

Janus (Amsterdam), *vii*, 9, September.

94 Neogalenismus Constitution und Infektion Bachmann
95 Beobachtungen über Lepra. A Sand
96 Bokelius' Work on the Plague, 1597 H. Schelenz—Johann Bokelius und sein Hamburger Pestbuch von 1597

1. **The Wounded in Naval Actions.**—Kirker discusses the management of the wounded in naval actions and holds that it is not absolutely necessary to neglect them during the active part of the fight. They may be transferred to some portion of the ship by the ammunition hoists without interference with the fighting forces. He remarks on the necessity of having a properly arranged and equipped operating room on modern ships of war, which is provided for in the German and Japanese navies, but the British navy seems not to have appreciated this necessity.

3. **Scurvy.**—From extensive and careful researches in the literature, Turnbull is forced to the conclusion that Osler's second suggested cause of the disease, the presence of some toxic material in the food, is the real exciting cause of scurvy, afloat or ashore, and that lime juice is not an absolute preventive, though a valuable remedy. He adduces as an evidence of this view the experience of Nansen, who gave special attention to the quality of the food supply and escaped scurvy, though unprovided with lime juice. Also the experience of other Arctic explorers, who found fresh meat a sufficient substitute and preventive.

5. **Abdominal Wounds in War.**—Roberts, who has read all the data obtainable, thinks that as a rule the conditions in the field hospital are not suitable for performing laparotomy. The experience with laparotomy in war has been most unfavorable, and he quotes from Senn and others in evidence of this, while on the other hand, many abdominal wounds recover without operation. In the majority of those who die the nature of the injury is such that death might occur whatever would be the treatment, but laparotomy might add to the danger. When occasions arise where the indications for operation are the same as in civil practice, laparotomy should be undertaken for increasing intraperitoneal hemorrhage endangering life, and when there is evidence that perforation of the stomach or bowel probably exists, provided that the patient is seen early enough.

6. **The Red-Cross Badge.**—The misuse of the Red-Cross badge and its possibility is noted by Porter, who sums up that while it should be easily recognizable, it should not be easily counterfeited, or be capable of confusion with any combatant device in use, afloat or ashore. It should be issued under authority only. When issued to individuals they also should be provided with means of proving their identity. Abuses of the use of the badge should entail definite penalties and, as a rule, these should be swift and severe.

17. **Hospital Abuse.**—The remedies for hospital abuse as suggested by Nash are that no persons except urgent or emergency cases should be admitted to hospitals without the recommendation of their own physician or some authority in the case of paupers. The one he would suggest would be the relieving officer. In cases of accident or emergency the hospital authorities should make inquiries and charge what they consider a reasonable amount for the attendance in the case of those able to pay. He would also abolish recommendations entitling to admission by laymen, and the formation of some establishment which should provide for the poor specialized skill at a reduced rate, in the hands of the profession only, to which no person should be sent except on recommendation of his medical attendant.

26. **Appendicitis.**—After giving in detail the general principles of medical treatment and reporting cases, Burnet says he considers himself warranted in drawing the following conclusions: Although when first seen a case of appendicitis may not seem very severe, the patient can with remarkable rapidity develop very grave symptoms. 2. The temperature is not nearly so important as the pulse, and is apt to vary to a greater extent during the progress of the illness than the pulse. 3. The pulse of 120 though necessarily giving rise to anxiety, need not indicate operative interference. 4. We are not justified in giving up a case as hopeless even when the patient seems in immediate danger and operation refused. Some at least do recover. While he believes there is no real medical treatment for appendicitis, yet we are obliged to do our best without operation in many cases, and he insists on the importance of the dietetic management and rest.

27. **Myelopathic Albumosuria.**—This name is one given by Bradshaw to cases with albumose in the urine and some affection of the marrow, which seem to form a group by themselves. He has found about twenty cases in the literature or on personal investigation. As to the cause of the condition nothing is known. It occurs most frequently in the latter half of life and in the masculine sex. The morbid anatomy consists of changes in the skeleton, invasion of certain bones by a soft mass of new growth, the proper osseous tissue undergoing absorption. The ribs, sternum and vertebral bodies seem always to suffer, less frequently the pelvic bone and the skull and only exceptionally the long bones. The growth seems to be closely allied to sarcoma in its structure and clinical progress, but differs in its multiple invasion, showing no tendency to metastases. The urine contains a proteid closely resembling albumin, but differing in its coagulability at a very low temperature, 58 C. It redissolves largely at the boiling point and reappears on cooling. The coagulation that forms on treatment with nitric acid also dissolves on boiling and returns on cooling. It is readily coagulable by hydrochloric acid. The onset of the disease is insidious; the condition of the urine may be the first symptom. Later there is pain and great suffering. The course is from bad to worse, though it is not uniformly so. The exact nature of the proteid in the urine is not certain; the most we can say is that it is closely allied to albumin and probably somewhat less complex in its constitution, and we may conveniently designate it as the Bence-Jones albumose, from the chemist who first described it. He reviews the hypotheses on the subject, but thinks the view that the albumose is actually produced in connection with the new growths is one which best agrees with the facts.

43. **Infection from Non-Gonococcic Urethritis.**—Audistère believes in forbidding marriage in case of a chronic urethritis positively non-gonococcic, if the affection is certainly microbian or subject to relapses from its receptivity to secondary infections. On the other hand, he allows marriage in such cases if the permanent or intermittent urethritis is constantly aseptic and has never been subject to secondary infections, or if there has been no recurrence of infection for six or eight months. In case of marriage during the receptive period, weak sublimate solutions should be used as a prophylactic measure by both husband and wife if the urethritis is microbian, if not, only by the husband. There should be no intercourse during the catamenial period on account of the excessive receptivity of the female at this time. If the wife becomes infected the husband must redouble his prophylactic measures to avoid a perpetual series of reinfections from her.

47. **Local Electric Treatment of Meniere's Disease.**—Bayer describes 7 out of a total of 15 cases, all improved or cured by local application of static electricity. He emphasizes that all catarrhal symptoms, etc., must be abolished before applying the electricity. He aims to flood the tympanum with the electric emanations, holding the end of the electrode about a centimeter from it. No inconvenience of any kind was observed. He varies the form of the application as indicated, preferring the brush for its soothing effect in congestion, and the spark when a stimulating action is desirable. Sclerosis requires a vigorous application of both. None of his patients were hysteric or neurasthenic.

50. **Otitis of Diabetic Origin.**—Bar mentions that the right ear is usually affected and the intense pain is not relieved by perforation of the drum. The secretion is persistent and liable to be hemorrhagic. The mastoid is almost inevitably involved. Edema frequently appears and is a grave sign as it indicates diffuse osteitis of the subjacent bone. Intervention should be prompt, before the edema develops, but should not be undertaken when the urine indicates an excessive proportion of sugar and acidity. These must be reduced before operating, as when the organic fluids are so much altered they favor bacterial proliferation. Affections of the heart, kidney or lungs and cachexia forbid intervention, and general narcosis is peculiarly dangerous in case of diabetes. But bearing all these points in

mind and after preparing the patient with a suitable diet and administration of sodium bicarbonate to alkalinize the blood, intervention should be as prompt as possible. In one of his patients the sugar in the urine fell from 60 to 20 gm. immediately after trephining a mastoid abscess, and this diminution persisted. The patient was a woman of 73 who had eliminated an average of 60 gm. of sugar a day for thirty years.

52. **Accessory Factors in Etiology of Cancer.**—De Bovis' important article on "The Supposed Increase of Cancer" was reviewed in this department October 4, p. 871. He believes that the classification of the populace according to ages and to sex, with the number of urban inhabitants to the square kilometer is the tripod which should serve as the base for all statistical study of the etiology of cancer. He now reviews a number of accessory factors. The influence of race has never been studied from the standpoint of the tripod of age for age, sex and the density of population of cities to the kilometer. He brings to this common ground the statistics that have been published in this country and elsewhere, and deduces the conclusion that the southern races, Italians, negroes and Jews, display a little less receptivity for cancer than the northern races. Among the latter the people of the hill country of Germany, which includes Bavaria, Wurtemburg, Baden, old Switzerland and German Austria, and the Scandinavians seem to be possibly the most receptive, but further research is needed on this point. Geographic or geologic theories do not afford the key to cancer, as he shows by comparison of the statistics, and he points out that the prosperity of a region, and its degree of "medical civilization" are two conditions which have a marked influence on the statistics. Cancer in such a region is brought to the attention of some physician sooner or later, while the profession know nothing of the cases that occur in families and regions too poor or ignorant to seek medical advice. Consequently the statistics show a remarkable rarity of cancer in the latter regions which investigation shows has no foundation. The causes of the frequency of cancer are not in the soil but on top of it. He queries whether it is possible that cold may be a certain factor, but states that no data are obtainable on this subject and neither in regard to professions, etc., brought to the common basis of age, sex and density of population. Experience to date seems to indicate an equal receptivity in rich and poor. The statistics that have been published in regard to cancer in different trades if reduced to the common basis of age for age, show approximately equal proportions. Difference in customs, diet, etc., render it impossible to compare the statistics of one country effectively with another. It is also difficult to estimate the rôle of alcohol in the production of cancer as the statistics give only the mortality from acute alcoholism, which is by no means its entire rôle in pathology. The consumption of alcohol in a country is likewise no criterion: a Norwegian or an Irishman can stand a dose of alcohol which would kill a Neapolitan. The results of the inquiry in Holland incriminated alcohol in 23.4 per cent. of the cases; in Germany, in 14.7 among the men and in .9 per cent. among the women; in Belgium in .4 per cent. Syphilis, tobacco poisoning and certain other factors play a more preponderant rôle according to the figures. The fact that cancer seems about as frequent among the poor as among the well-to-do tends to disprove the theory that meat is a considerable factor in its etiology. Heredity seems the most important. It was established in 18.1 per cent. in the Holland inquiry; in 16.6 per cent. in the Belgian, and in 17 per cent. in the German. These proportions are larger than hitherto assumed; cancer is correctly diagnosed more frequently than it used to be, so that as years pass, even if the annual average of cases does not increase, yet the cases known among the older generations will certainly increase and show still more notably the influence of heredity. It is possible also that if the inquiry were restricted to the well-to-do, the proportion would be much larger even now, as pathologic antecedents are heeded and remembered better than among the poor. If heredity does actually play a part in the propagation of cancer there is reason to suppose that it would increase in frequency with time, and be transmitted to the grandchildren, but in the German inquiry the grandparents were mentioned in only 74 out of 1563 cases in which some relative had succumbed to cancer. Examining the statistics from the standpoint of age for age, sex, and density of urban population, they show that the assumption that carcinoma is occurring younger than formerly is erroneous. The fact is exactly the reverse. The age of maximum frequency is shown to be 70 for men and 75 for women. In regard to "cancer houses," de Bovis observes that a building containing a number of families is more liable to shelter several cases of cancer than a private residence. Also that a district containing elderly people of means is more liable to have a larger proportion of cases of cancer than a district of the homes of working people where children swarm and the old and sick drift to some charitable institution. After an exhaustive study of the statistics bearing on the contagion of cancer, he concludes that marriage does not create a predisposition to it, and that contagion between man and wife is more than doubtful; but, on the other hand, maternity evidently does afford a predisposition to cancer of the uterus, while celibacy in women predisposes to cancer of the breast. There seems to be a sort of predestination to cancer. A person bearing the cancer germ, either born with it or acquiring it, is doomed to succumb sooner or later. If married it may occur as cancer of the uterus, if unmarried, as cancer of the breast or face twenty years later. As to contagion by contact with cancer subjects, the number of physicians, nurses and other attendants who have to tend cancer subjects is so large that it is only a matter of surprise that the cases of supposed contagion are not more numerous than the low percentage of 11 which is given in the Holland inquiry, the highest of all. In none of these cases was the physician or nurse involved. In 12,179 cases of cancer reported by the German inquiry, "from 20 to 30" are mentioned as having possibly been acquired by attendance on a cancer subject. Fully this number are liable to be affected with cancer in the natural proportion. Gallet and Deschamps recently stated that they had not known of a single case of cancer among hospital nurses in Belgium in the last thirty years, and that only one physician has died from cancer at Brussels since 1890. Payne's figures also show that the cancer mortality among British physicians is less than the general average. In Germany only 10 physicians were found in the 4454 male subjects, while physicians average 3 to every 1000 males over 40 years of age in that country. Inoculation is another question, but "instances of it are so rare!" de Bovis exclaims. The immense benefit that can be derived from statistics is the keynote of his article, and he urges the importance of collecting them on a uniform basis for all countries. The present methods of collective inquiries serve only for the personal anamnesis of cancer subjects.

53. **Tuberculous Infection by Way of the Digestive Tract.**—Heller compares the statistics of diphtheria cases at Boston as published by Councilman, Mallory and Pearce, with his own statistics collected at Kiel. He found that the percentage of the cases of tuberculous infection traceable to the digestive tract was 7.4 per cent. in 714 cases of diphtheria and 37.8 per cent. of the cases of tuberculosis among them. The Boston statistics are respectively 5.9 per cent. and 37.1 per cent. in 220 cases of diphtheria. He also describes a new case of extensive tuberculosis of the intestines in a child of 13 free from the disease elsewhere.

55. **Early Diagnosis of Icterus.**—Hamel points out that it is the serum which becomes tinted with the bile pigments and by its presence in the capillaries produces the symptom of icterus. It is, therefore, possible by examination of the serum to determine the presence of these pigments long before there is any appreciable coloring of the skin or conjunctiva, and thus diagnose icterus in its incipient stages.

58. **Correction of Clubfoot.**—Wieting recommends to place the foot on a small board a little longer and wider than the sole, supported by a block at each end. The plaster cast is then applied as usual over the board. The advantages of the board in the treatment of children's feet are obvious.

60. **Phototherapy of the Male Urethra.**—Strebel announces that he has succeeded in inducing a lively reaction in the male urethra to the application of phototherapy. He

thinks that this is the first step toward successful radiotherapy of gonorrhea and other affections of the urethra. The inflammation induced lasted for five hours, and extended for 12 cm. into the urethra. He uses an iron lamp and apparatus of his own invention, and experimented on himself.

61. **Pathogenesis and Early Sign of Typhoid.**—Schottmüller states that in 119 cases of typhoid fever he was able to determine the presence of the bacilli in the blood in 84 per cent., and in the first twenty-four to thirty hours, long before the Widal test was positive. He is convinced that typhoid fever is essentially a bacteriemia and that the localizations in the intestines are by no means inevitable or indispensable. The severity of the case is not altogether dependent on the number of bacteria in the blood, but as a general rule large numbers are associated with a severe clinical course of the disease. He tabulates the details of 50 cases showing this connection.

62. **Traumatic Laceration of the Valves and Aorta.**—Schmidt describes a case which establishes the possibility of traumatic laceration of valves without pre-existing endocarditis. The patient was a man of 85 in this case, who fell from a second-story window with fatal results. The rear flap of the aortic valve was torn completely through with an angular tear, and the front flap of the mitral valve was also lacerated.

63. **Traumatic Nephritis.**—In the case reported by Curschmann the injury to the kidney was followed by shock, vomiting and meteorism and a large palpable tumefaction in the region of the right kidney, which subsided after a few weeks. There was albuminuria and elimination of tube casts for years, but no other signs of a kidney lesion. He regards it as a case of traumatic, circumscribed interstitial nephritis, free from any complications on the part of the heart or circulation. He suggests that many cases of supposed contracted kidney which have been recorded as exceptionally mild, latent and benign in their clinical course, may have had an unsuspected traumatic origin.

66. **Heusner's Extension Bandage.**—Wülfing reports that time is confirming the great benefits of the extension bandages devised by Heusner and in constant use at his and several other clinics, including Hoffa's, Helferich's and others. A white flannel-like cloth is used for the purpose, which is called buckskin or moleskin, and is obtainable in every dry-goods store at a low price. The strips are cut long and wide enough to cover the entire limb. An adhesive fluid is then sprayed on the limb, and the strips of cloth applied smoothly with a bandage outside. The spray fluid is made of 3 gm. castor oil; dammar resin and rosin, each 10 gm.; turpentine, 1 gm.; ether, spirit. and oil of turpentine, each 55 gm. It requires some technical skill to blend and filter. These bandages can remain for weeks or months without changing. It is easily removed by moistening with olive oil or alcohol. The strips can be used again and again after washing. The bandage can be strengthened by a starch bandage outside if necessary. A cylinder of tricot can be used instead of the strips if desired. This extension bandage has done good service also after laparotomies, etc., and for fractures of the ribs. The spray fluid has also proved useful in applying felt corsets and the extension bandage is also applicable to military surgery as a substitute for the more expensive and less effective adhesive plaster.

70. **Ectopic Pregnancy and Hemoglobinuria.**—Tauber describes a clinical picture observed in a woman six weeks after menstruation. The symptoms were those of a sudden and copious internal hemorrhage, and a tumor could be palpated in Douglas' sac. The accumulated blood was rapidly absorbed and an attack of acute hemoglobinuria followed. Michaelis has reported a similar case. They are explainable by the light of the recent researches on the hemolytic serums induced in animals by injections of small amounts of blood from another animal. In these clinical cases the amount of blood was too large, and it was too rapidly absorbed for the production of the anti-autolysin to keep pace with that of the autolysin. The consequence was that the absorbed blood corpuscles were destroyed and the liberated hemoglobin was eliminated through the kidney, causing transient nephritis. In two or three days the normal balance was re-established and order was restored.

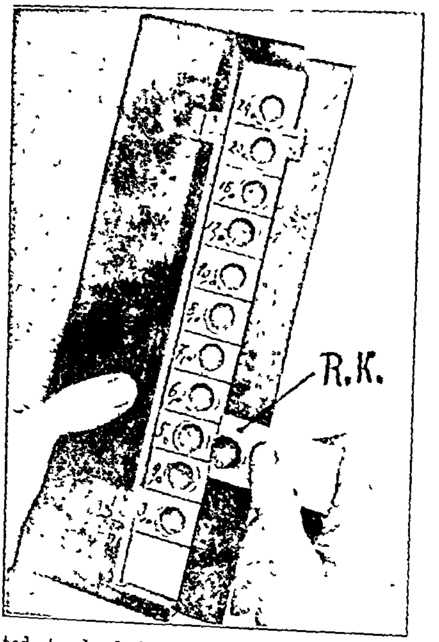
77. **Inhalation of Cinnamic Acid in Tuberculosis.**—Bäumel has found that it is possible to secure the advantages of cinnamic acid in the treatment of tuberculosis without the drawbacks of injecting it. After numerous experiments he found that the solution best adapted for the purpose was a 2 per cent. solution of "hetol" either in water or 50 per cent. alcohol. He uses it in the form of a spray once to three times a day for several minutes to a maximum of five. He found that infiltration of the apices subsided in less than two weeks and that in three months all the physical signs of tuberculosis vanished in many instances without a change of air or occupation. In some cases of hoarseness that had persisted for years, with fever, emaciation and other signs of apical catarrh, the hoarseness vanished completely in less than two weeks. He also found that the diarrhea of consumptives was rapidly and durably conquered by cinnamic acid in .1 gm. tablets. The hetol in these cases comes directly in contact with the lesions in the throat and intestines, and his success in this line encouraged him to try the hetol for external application in a case of lupus, in the form of a 5 per cent. salve of cinnamic acid, after pricking each nodule with a galvanocautery. In the course of two months the lesions had healed and the glands shrunk to a quarter of their former size. He thinks that systematic inhalation of cinnamic acid will abort tuberculosis in the early stages and thus prove an important measure for the extermination of the white plague.

79. **Various Sugars in Therapeutics.**—Clemm has been making an exhaustive study of various sugars and their significance for normal and morbid processes. Among the results attained is the confirmation of the benefits to be derived from sugar in reducing gastric hyperacidity. He gives the curve of acidity in a dog with a Pavloff fistula fed respectively with milk; with 20 per cent. levulose with the milk; or with 30 per cent. dextrose. The amount of gastric juice was 29 c.c. on the milk diet; 13.5 c.c. on the milk and levulose, and only 2.1 c.c. on the milk and dextrose. The dextrose curve resembles that observed when atropin is administered to depress the gastric secretion, and shows that practically the same results can be obtained with a harmless sugar. The new crystallized form for malt extracts obviates the drawbacks of a syrup. "Ossin" is another sugar preparation which he has found very beneficial for certain cases. It is a combination of the oleates of cod liver oil with albumin and sugar. He reports two cases in which a course of treatment with sugar proved remarkably beneficial. In the first a robust man of 37 developed anemic symptoms and nervous dyspepsia with suspicion of cancer. The stomach contents and feces were examined frequently on the latter account, which enabled the progress made under sugar treatment to be systematically verified. He took a course of mineral waters and of arsenic, which cured the diarrhea and relieved the nervous symptoms, but the hyperacidity persisted. The cure was completed by prescribing three tablespoonfuls daily of a 50 per cent. solution of levulose for two weeks, after which dextrose was substituted for five weeks. Clemm urges others to investigate the effects of different sugars and of the sugars formed out of starch by the animal ferments. He thinks that much more important results will be attained in this line than from the study of new drugs.

80. **Dubious Sex.**—Neugebauer has made for years a special study of cases of dubious sex and refers those interested to the compilation of his experiences which has been published recently, profusely illustrated, in M. Hirschfeld's Yearbook for Intermediate Sex (*Jahrbuch für sexuelle Zwischenstufen mit besonderer Berücksichtigung der Homosexualität*, iv, Leipsic). He contends that cases of dubious sex are much more common than is generally accepted, and that physicians must be extremely prudent in their judgment, as error may entail the most serious and far-reaching consequences.

84. **Chromoradiometer.**—Holzknecht is the court expert for *x*-ray damage cases at Vienna. He has invented a means of exact dosage for *x*-ray treatment. The principle is the same

as that used in determining the length of time required to print photographs to have them all of the same tone, by exposing at the same time to the sun a piece of the print paper alongside the negative. He found that chemically pure sodium sulphate and chlorid turn yellow on exposure to the *x*-rays when mixed, and take a deeper color, more of a lavender, if they have previously been melted together. He therefore exposes a small amount of this combination of salts to the action of the *x*-rays alongside the part to be treated with them. Inspection of the tint reached by the chemical is an absolutely reliable criterion of the intensity of the *x*-rays. Comparison of the tint, therefore, with the chromoradiometer shows the exact dosage of the rays. R. K. in the cut signifies the "Reagens-Körper," or testing agent, as it is being compared with the graduated standard tints on the scale. He affirms that the intensity of the reaction to the light is directly proportional to the amount of light absorbed. Also that there is no such thing as an idiosyncrasy on the part of the skin. The part to be treated is exposed to the rays until the little patch of the chemical exposed beside it has attained the desired tint to correspond with the standard on the scale calculated for the part of the body, age and other particulars.



Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

The Practical Medicine Series of Year Books, Comprising Ten Volumes of the Year's Progress in Medicine and Surgery, Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M D, Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume IX. Physiology, Pathology, Bacteriology, Anatomy. Pathology Edited by W. A. Evans, M.S., M.D., Professor of Path ,
cago. I f Physicians and Surgeons, Chi-
Bacteric lph Gehrman, M.D., Professor of
1902. and Surgeons, Chicago. August,
ereal Diseases, Nervous and Mental Diseases. $1.25. Volume X. Skin and Ve-
Baum, M.D., and Hugh T. Patrick, M.D. Edited by W. L.
Pp. 245 Price, $1 25 Chicago: The Year-Book Publishers. September, 1902. Cloth.

The Treatment of Tabetic Ataxia by Means of Systematic Exercise. An Exposition of the Principles and Practice of Compensatory Movement Treatment. By Dr. H. S. Frenkel, Medical Superintendent of the Sanatorium "Freihof" in Heiden (Switzerland). Only Authorized English Edition, Translated and Edited by L. Freyberger, M D. (Vienna), M.R.C P. Lond., M.R.C.S. Eng., Hon. Physician to the St. Pancras and Northern Dispensary. With 132 Illustrations Cloth. Pp. 185. Price, $3.00. Philadelphia: P. Blakiston's Son & Co 1902.

A Manual of Practical Anatomy. By the Late Professor Alfred W. Hughes, M.B., M.C. Edin., F.R C.S. Edin., F.R.C.S. Eng., Professor of Anatomy, King's College, London. Edited and Completed by Arthur Keith, M D. Aberd.; F.R.C.S. Eng., Lecturer on Anatomy, London Hospital Medical College. In Three Parts. Part III. The Head, Neck, and Central Nervous System. Illustrated by 12 Colored Plates and 204 Figures in the Text. Cloth. Pp. 387. Price, $3 00 net Philadelphia: P. Blakiston's Son & Co. 1902.

Clinical Methods. A Guide to the Practical Study of Medicine By Robert Hutchison, M.D., M.R C.P., Assistant Physician to the London Hospital, and Harry Rainy, M.A., F.R C.P. Ed, F R S E., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. With Upwards of 150 Illustrations and 8 Colored Plates Fifth Edition. Ninth Thousand. Cloth. Pp. 612. Price, $2 50 Chicago: W. T. Keener & Co 1902.

A Compend of Human Physiology Especially Adapted for the Use of Medical Students. By Albert P. Brubaker, A M., M D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College. Eleventh Edition, Revised and Enlarged With Illustrations and a Table of Physiologic Constants Cloth Pp 270 Price, $0 80. Philadelphia: P. Blakiston's Son & Co 1902

A Text-Book of Anatomy. By American Authors Edited by Frederick Henry Gerrish, M D., Professor of Anatomy in the Medical School of Maine, Bowdoin College Second Edition, Revised and Enlarged. Illustrated with 1,003 Engravings in Black and Colors. Cloth. Pp 914. Price, $6 50 net. Philadelphia and New York: Lea Brothers & Co. 1902.

A Nurse's Guide for the Operating Room. By Nicholas Senn M.D., Ph.D, LL D, C.M, Professor of Surgery, Rush Medical College. Published Under the Direction of the Sisters of Charity, St Joseph's Hospital, Chicago Cloth. Pp 127. Price, $1 50 net Chicago: W. T. Keener & Co. 1902.

A Manual of Medical Treatment or Clinical Therapeutics By I. Burney Yeo, M.D, F.R C P., Emeritus Professor of Medicine in King's College, London Tenth Edition Fifteenth Thousand Vols. I and II. Cloth. Pp. 696 Price, $5 00. Chicago: W. T Keener & Co. 1902.

Transactions of the One Hundred and Twelfth Annual Meeting of the Medical Society of Delaware, Held at Lewes June 11, 1901. Paper. Pp. 30. Wilmington, Del: Sunday Star Print. 1901.

Transactions of the Medical Association of the State of Alabama. Organized 1847. Meeting of 1902. Birmingham, April 15-18 Cloth. Pp. 185. Montgomery, Ala.: The Brown Printing Co. 1902.

Transactions of the Iowa State Medical Society. Volume XX. Fifty first Annual Session, 1902 Cloth. Pp 469 Council Bluffs, Iowa: New Nonpareil Co 1902.

Transactions of the West Virginia State Medical Association. Instituted April 10, 1867. Paper. Wheeling: Daily Intelligencer. 1902.

The Public Service.

Army Changes.

Changes of station of medical officers of the U. S Army, for the week October 3 to 9:

Amador, R. A., contract surgeon, U. S. A. Leave of absence granted in S. O. No 146, June 27, 1902, Department of the E is extended one month.

Blanchard, Robt. M, first lieutenant and asst.-surgeon, U. S A will proceed, on the expiration of his present leave of absence, from Batavia, Ohio, to Columbus Barracks, Ohio, and report in person to the commanding officer of that post for duty, and by letter to the commanding general of the Department of the Lakes

Drake, Chas. M., major and surgeon, U. S. Vols By direction of the President, so much of Paragraph 15, S. O. No 200, Sept 2 1902, Adjutant-General's Office, as directs honorable discharge of Major Charles M. Drake, surgeon, U. S. Vols, to take effect Oct 10, 1902, is revoked by the Secretary of War. By direction of the President, is honorably discharged to take effect Dec. 31, 1902, his services being no longer required.

Hoff, John Van R. Paragraph 16, S. O. No. 221, Adjutant General's Office, Sept. 23, 1902, is so amended as to direct Lieut. Col John Van R. Hoff, deputy surgeon-general, U. S. A., on the completion of his duty at Fort Bayard, N. M., to proceed to Jefferson Barracks, Mo, and make an inspection of certain matters at that post pertaining to the Medical Department of the Army, under such instructions as he may receive from the surgeon general of the Army. On completion of this duty he will return to his proper station, this city.

James, H. M., contract surgeon, U. S. A. The leave granted him, in Special Orders No. 81, Aug. 5, 1902, Camp George H Thomas, Ga, is extended two days.

Skinner, George H., captain and asst.-surgeon, U. S. A. The leave of absence granted him in Special Orders No. 141, Aug. 30, 1902, Department of Dakota, is extended one month.

Sears, Edward O., contract surgeon, U. S. A., is relieved from duty at Ft. Niobrara, Neb, and will proceed to his home at Salem, Va., and on arrival will report by letter to the surgeon-general of the Army for annulment of contract.

Sinks, Edward D., captain and asst.-surgeon, U. S. Vols, now in San Francisco, Cal., will proceed to Ft. Bayard, N. M., and report in person to the commanding officer of the U. S. General Hospital at that place for treatment.

Southall, Edward A., captain and asst.-surgeon, U. S. Vols., is, by direction of the Secretary of War, granted leave of absence for one month on surgeon's certificate of disability, with permission to apply for an extension of one month.

Stoney, Randall C., contract surgeon, U. S. A., now at Pinopolis, S. C., is relieved from further duty in the Division of the Philippines and will proceed to Ft. Screvin, Ga., reporting on arrival to the commanding officer of that post for duty and, by letter, to the commanding general of the Department of the East, relieving Captain Chas. F. Kieffer, asst.-surgeon, U. S. A.

Captain Kieffer, on being thus relieved, will proceed to Philadelphia and assume the duties of attending surgeon and examiner of recruits in that city.

Thompson, Frank E., contract surgeon, U. S. A., is relieved from duty at Ft. Niagara, N. Y., and will proceed to his home in Cleveland, Ohio, and on arrival will report to the surgeon-general of the Army for annulment of contract.

Turnbull, Wilfred, first lieutenant and asst.-surgeon, U. S. A., is relieved from further duty in the Division of the Philippines and will proceed to San Francisco, Cal., and on arrival will report by telegraph to the adjutant l for orders.

Torney, George H., major and surgeon, U. S. A., is granted leave of absence for one month, to take effect on being relieved from duty *at the Army and Navy General Hospital, Hot Springs, Ark.*, under Paragraph 13 S. O. No. 231, Oct. 1, 1902, Adjutant-General's Office.

Wood, Halsey L., contract surgeon, U. S. A., will report to the commanding officer, U. S. transport *Warren,* for duty as transport surgeon.

Walker, Wm. H., contract surgeon, U. S. A., is relieved from duty at Camp Thomas, Ga., and will proceed to his home at Henderson, Ky., and on arrival will report to the surgeon-general of the Army for annulment of contract.

Wells, Geo. M., captain and asst.-surgeon; U. S. A., is granted leave of absence for three months, to take effect on arrival of Major Marlborough C. Wyeth, surgeon, U. S. A., at Ft. Wadsworth, N. Y.

Church, First Lieut. James R., asst.-surgeon, U. S. A., now on duty at the U. S. General Hospital, Washington Barracks, D. C., will proceed to West Point, N. Y., and report in person to the superintendent of the U. S. Military Academy for temporary duty, *to relieve First Lieut. Albert E. Truby, asst.-surgeon, U. S. A.*

Lieutenant Truby, on being thus relieved, will proceed to Washington Barracks, D. C., and report in person to the commanding officer of the U. S. Gen. Hospital at that post for duty.

Gorgas, Major Wm. C., surgeon, U. S. A., having reported to the surgeon-general of the Army in compliance with Paragraph 26, Special Orders No. 207, Sept. 3, 1902, Adjutant-General's Office, is assigned to temporary duty in this city for the purpose of completing his report of sanitary work in Cuba, to date from Oct. 3, 1902.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending October 11:

P. A. Surgeon C. P. Bagg, ordered to the Naval Hospital, Mare Island, Cal.

Asst.-Surgeon E. M. Brown, detached from the Naval Hospital, Mare Island, and ordered to the Naval Museum of Hygiene and Medical School, Washington, D. C.

P. A. Surgeon R. S. Blakeman, having been found incapacitated for active service on account of disability incident thereto, is placed on the retired list of the Navy.

Surgeon F. J. B. Cordeiro, detached from the *Constellation,* and ordered to the Naval Training Station, Newport, R. I.

Surgeon M. H. Crawford, detached from the *Chicago,* and ordered home, when his resignation will be accepted, voluntarily tendered.

P. A. Surgeon M. H. Bucher, detached from the *Panther* and ordered to the *Machias.*

P. A. Surgeon W. H. Bell ordered to the *Yankton.*

P. A. Surgeon D. N. Carpenter, detached from the *Illinois* and ordered to the *Chicago.*

Asst.-Surgeon T. M. Lippitt, ordered to the Naval Hospital, New York.

Asst.-Surgeon J. P. Traynor, detached from the Naval Hospital, New York, and ordered to the Naval Museum of Hygiene and Medical School, Washington, D. C.

Asst.-Surgeon A. Stuart, detached from the *Yankton,* and ordered home to wait orders.

Asst.-Surgeon F. M. Bogan, detached from the *Machias,* and ordered to the Naval Hospital, Washington, D. C., Oct. 30.

Asst.-Surgeon F. M. Munson, detached from the Naval Hospital, Washington, D. C., and ordered to the Naval Museum of Hygiene and Medical School, Washington, D. C.

Asst.-Surgeon M. W. Baker, detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Museum of Hygiene and Medical School, Washington, D. C.

Asst.-Surgeon H. F. Strine, detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Museum of Hygiene and Medical School, Washington, D. C.

Asst.-Surgeon R. O. Marcour, ordered to the *Franklin.*

Asst.-Surgeon H. E. Odell, ordered to the Naval Hospital, Norfolk, Va.

Asst.-Surgeon R. E. Ledbetter, detached from the *Chicago* and ordered to the *Illinois.*

Drs. B. F. Jenness, H. Shaw, and R. H. Michels, appointed acting assistant-surgeons, with the rank of lieutenant, from October 4.

Dr. John L. Neilson, appointed an asst.-surgeon, October 4.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Oct. 9, 1902:

Surgeon Fairfax Irwin, to proceed to Delaware Breakwater, Delaware *Breakwater quarantine, and Reedy Island quarantine,* as inspector of unserviceable property..

Surgeon H. R. Carter, detailed as a member of Revenue Cutter Service retiring board convened to meet at Baltimore, October 15.

P. A. Surgeon C. P. Wertenbaker, two days' leave of absence under Paragraph 179 of the regulations.

P. A. Surgeon J. A. Nydegger, detailed as a member of Revenue Cutter Service retiring board convened to meet at Baltimore, October 15.

P. A. Surgeon L. E. Cofer, detailed for special temporary duty in the Bureau for two days, October 3. To proceed to Washington, D. C., for special temporary duty.

Asst.-Surgeon H. B. Parker, to rejoin station at Hygienic Laboratory, Washington, D. C.

Asst.-Surgeon, B. S. Warren, granted six days' extension of leave of absence from October 13.

Asst.-Surgeon A. M. Stimson, to report to Surgeon G. W. Stoner, Immigration Depot, New York, *for temporary duty.*

A. A. Surgeon C. W. Bailey, granted leave of absence for 15 days from September 26.

A. A. Surgeon S. B. Foster, granted leave of absence for 17 days from October 20.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for 31 days from October 8.

A. A. Surgeon H. B. Hallett, granted leave of absence for 5 days from October 10.

A. A. Surgeon J. P. McCormac, granted leave of absence for 24 days from September 23.

A. A. Surgeon W. E. Rice, granted leave of absence for seven days from October 7.

A. A. Surgeon J. C. Rodman, granted leave of absence for five days.

Senior Pharmacist F. S. Goodman, on being relieved by Junior Pharmacist Frank Siedenburg, to proceed to Norfolk, Va., and report to medical officer in command for duty.

Senior Pharmacist J. V. LaGrange, on being relieved by Senior Pharmacist C. G. Carlton, to proceed to Boston, and report to the medical officer in command for duty and assignment to quarters, relieving Senior Pharmacist H. E. Davis.

Senior Pharmacist G. C. Allen, relieved from duty at Norfolk, Va., and directed to proceed to New Orleans, and report to medical officer in command for duty and assignment to quarters, relieving Junior Pharmacist Frank Siedenburg.

Senior Pharmacist C. G. Carlton, relieved from duty at Chicago, and directed to proceed to Cairo, Ill., and report to medical officer in command for duty and assignment to quarters, relieving Senior Pharmacist J. V. LaGrange.

Senior Pharmacist H. E. Davis, on being relieved by Senior Pharmacist J. V. LaGrange, to proceed to Louisville, Ky., and report to medical officer in command for duty and assignment to quarters, relieving Junior Pharmacist C. W. Stephenson.

Junior Pharmacist C. W. Stephenson, on being relieved by Senior Pharmacist H. E. Davis, to proceed to Chicago, and report to medical officer in command for duty and assignment to quarters.

Junior Pharmacist Frank Siedenburg, on being relieved by Senior Pharmacist G. C. Allen, to proceed to Key West, *Fla.*, and report to medical officer in command for duty and assignment to quarters, relieving Senior Pharmacist F. S. Goodman..

BOARDS CONVENED.

Board convened at the Marine-Hospital office, San Francisco, Oct. 6, 1902, for the physical examination of an engineer of the Revenue Cutter Service. Detail for the Board: P. A. Surgeon W. G. Stimpson, chairman; Asst.-Surgeon W. C. Rucker, recorder.

Board convened at Baltimore, October 6, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon H. R. Carter, chairman; P. A. Surgeon J. A. Nydegger, recorder.

Board convened at Washington, D. C., October 7, for the physical examination of a candidate for appointment as second assistant engineer, R. C. S. Detail for the Board: Assistant Surgeon-General L. L. Williams, chairman; Assistant Surgeon-General W. J. Pettus, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 11, 1902:

SMALLPOX—UNITED STATES.

Colorado: Denver, Sept. 20-27, 3 cases.

Illinois: Chicago, Sept. 27-Oct. 4, 3 cases.

Kentucky: Covington, Sept. 20-Oct. 4, 11 cases.

Maryland: Baltimore, Sept. 27-Oct. 4, 1 death..

Massachusetts: Sept. 27-Oct. 4, Boston, 10 cases, 3 deaths; Fall River, 2 cases.

Michigan: Detroit, Sept. 27-Oct. 4, 18 cases.

Nebraska: Omaha, Sept. 27-Oct. 4, 1 case.

New Hampshire: Sept. 27-Oct. 4, Manchester, 2 cases; Nashua, 21 cases.

New Jersey: Hudson County, Sept. 28-Oct. 5, 1 case; Newark, Sept. 27-Oct. 4, 7 cases, 2 deaths.

New York: Sept. 27-Oct. 4, 1 case.

Ohio: Ashtabula, Sept. 27-Oct. 4, 1 case; Cleveland, Sept. 27-Oct. 4, 50 cases, 19 deaths; Dayton, Sept. 27-Oct. 4, 1 case; Hamilton, Sept. 27-Oct. 4, 3 cases; Toledo, Sept. 13-27, 15 cases, 3 deaths.

Pennsylvania: Altoona, Sept. 27-Oct. 4, 2 cases; Erie, Sept. 27-Oct. 4, 1 case; Johnstown, Sept. 20-Oct. 4, 33 cases, 4 deaths; McKeesport, Sept. 27-Oct. 4, 5 cases, 1 death; Philadelphia, Sept. 27-Oct. 4, 3 cases; Pittsburg, Sept. 27-Oct. 4, 24 cases, 6 deaths; Reading, Sept. 22-29, 2 cases.

South Carolina: Charleston, Sept. 27-Oct. 4, 2 cases.

Tennessee: Memphis, Sept. 27-Oct. 4, 2 cases.

Wisconsin: Green Bay, Sept. 21-28, 1 case; Milwaukee, Sept. 27-*Oct. 4, 8 cases.*

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 30-Sept. 20, 5 cases.

Barbados: Sept. 1-15, 266 cases, 11 deaths.

Canada: *Amherstburg, Sept. 27-Oct. 4, 1 case.*

Ecuador: Guayaquil, Sept. 6-13, 4 deaths.

Great Britain: Sept. 13-20, London, 4 cases, 3 deaths; New Castle-on-Tyne, 2 cases; Sunderland, 1 case.

India: Bombay, Sept. 2-9, 3 deaths; Madras, Aug. 30-Sept. 5, 2 deaths.

Italy: Palermo, Sept. 13-20, 5 cases, 1 death.

Russia: Moscow, Aug. 31-Sept. 6, 1 case; Odessa, Sept. 6-20, 3 cases, 1 death; Warsaw, Sept. 6-30, 5 deaths.

Spain: Barcelona, Sept. 1-15, 2 deaths.

Straits Settlements: Singapore, Aug. 16-23, 3 deaths.

Switzerland: Geneva. Sept. 6-13, 1 case.

YELLOW FEVER.

Colombia: Panama, Sept. 22-29, 4 cases. 2 deaths.

Mexico: Coatzacoalcos, Sept. 20-27, 4 cases; Vera Cruz, Sept. 20-Oct. 4, 25 cases, 14 deaths.

CHOLERA—FOREIGN.

Egypt: Alexandria, Aug. 31-Sept. 20, 612 cases, 469 deaths.

India: Bombay, Sept. 2-9, 1 death; Calcutta, Aug. 31-Sept. 6, 15 cases; Madras, Aug. 30-Sept. 5, 1 death.

Japan: Nagasaki, Aug. 31-Sept. 10, 46 cases, 32 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Sept. 23, 2 cases, 2 deaths—1 case from Oakland; Sept. 26, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

Egypt: Alexandria, Aug. 31-Sept. 20, 6 cases, 2 deaths.

India: Bombay, Sept. 2-9, 41 deaths; Calcutta, Aug. 31-Sept. 6, 16 deaths; Karachi, Aug. 24-Sept. 10, 10 cases, 8 deaths.

Turkey: Smyrna, Oct. 4, present.

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Original Articles.

TUBERCULOSIS OF THE MYOCARDIUM.*

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PHILADELPHIA.

Previous to 1826 the existence of cardiac tuberculosis was denied. Tuberculosis of muscle was known to be rare and the heart, with its unceasing contractions, was considered immune. Again, the theory of the natural antagonism between cardiac disease and tuberculosis was almost universally accepted.

Laennec,[1] in 1826, in a "Treatise on Auscultation," affirmed the existence of cardiac tuberculosis, assigning to the heart the thirteenth rank among organs affected. He gave no instances. To Townsend[2] of Dublin belongs the honor of reporting, in 1832, the first case of myocardial tuberculosis. Others followed at infrequent intervals until in 1865 Haberling[3] was able to collect 12 cases, some, however, being of the pericardium only. Sänger,[4] in 1878, gathered and classified 22 cases, including 3 of his own and omitting several doubtful ones. This was thorough work and paved the way for all subsequent study of the subject.

In 1892 he was followed by Pollak,[5] and in 1895 Valentin[6] published his monograph—a critical summary of 36 reported cases. More or less extended articles by Mendez,[7] Labbi,[8] Barie,[9] Sangalli,[10] Kaufmann,[11] and others followed, to be summed up in an elaborate and valuable thesis by Fuchs[12] in 1898. This author collected 53 cases, including 2 of his own. The subsequent literature embraces articles by Eisenmeyer, Moser,[13] Crawford and other writers.

THE AUTHOR'S CASE.

Moser's personal observation with 5 cases he gathered from the literature, which are not included in Fuchs' list—3 being reported after his article was written—bring the total to 59. In a careful search of all available sources I have been able to add 12 cases exclusive of one of my own, making a total of 72. (See table.) My own case may be briefly reported:

A. T., aged 22 years, female, occupation clerk. The family history was good except for a slight tuberculous taint. The personal history includes the usual childhood diseases and a light attack of pleurisy at 17 years of age. One week prior to my first visit, March 20, 1888, the patient developed marked recurring chilly sensations lasting an entire day. These were accompanied by stitch-like pains in the left mammary and left axillary regions, by jerky respiratory movements and dyspnea. The temperature rose to 102 F. subsequently and then continued to range from this grade to 100.2. The physical signs were at first merely defective expansion and a friction-rub indicating plastic pleurisy, followed later by those of the serofibrinous variety. The apex beat of the heart was displaced and lost behind the sternum. The pleural sac was about two-thirds filled with exudate, which was freely movable on changing the patient's posture. There was nothing unusual presented by the case and the dyspnea was only moderately well marked, until the seventh day, when of a sudden the heart's action became distinctly weak and rapid, but there was no arhythmia. At this time dyspnea was also more pronounced, and slight lividity of the mucous surfaces and finger tips was noticeable. These symptoms, however, passed away in the course of a few hours as the result of free stimulation. It was proposed to aspirate on the following day, but to my great amazement a member of the family called on me the next morning informing me that the patient had just died without the slightest warning and with startling suddenness. From all that I could gather, death probably occurred in syncope.

The autopsy was made twelve hours after death. Body well nourished, medium height. A flat percussion note over the left side from fourth rib to base of chest. On opening thorax nearly two liters of serofibrinous fluid, with only a moderate amount of fibrin, was found in left pleural sac; on the right side pleura adherent near to the base, otherwise apparently normal. Neither cultural nor inoculation tests were made of the exudate. No macroscopic changes were presented by the left pleural membranes and no bands of adhesion between the layers. The lower portion of the upper and the entire lower lobe were dark and atelectatic; near the lower border of the upper lobe and close to the pulmonary pleura there was a small caseous nodule, probably the primary focus. A similar small tuberculous area was situated in the upper lobe of the right lung, otherwise the lungs showed nothing abnormal.

The heart occupied a position within though near to the mid-sternal line; it had not been rotated on its own axis. The heart weighed 240 grams, hence was not hypertrophied. There was fibrous pericarditis present at the base of the heart and immediately beneath this area a single large caseous tubercle in the wall of the right auricle projecting slightly into its cavity and involving the entire thickness of it. The endocardium showed nothing pathologic on macroscopic examination. On account of the presence of the circumscribed pericarditis it was evident that the myocardial involvement was secondary and the result of extension by contiguity. The bronchial glands also were free from tubercular change. Briefly, the histologic peculiarities were those characterizing the tuberculous processes elsewhere: embryonal cells and giant cells with the presence on the interior of the latter of a few tubercle bacilli and caseous areas. An indefinite fibrous capsule envelopes the growth. Muscle fibers in the vicinity of the growth showed atrophy. The affected pericardium and the left auricle and ventricle were not examined microscopically. This is regrettable in the light of the recent microscopic studies of plastic pericarditis. (vide infra).

Most of the important contributions to the subject of shows embryonal adjacent cells with areas of caseous material and more or less fibrous tissue. The tubercle bacillus is found practically always when sought with appropriate methods. It is present in small or large numbers, most often within the great cells.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

DIAGNOSIS.

Differential pathologic diagnosis is not difficult with modern methods. Tumors show their individual peculiarities of structure and lack the presence of the bacillus. Actinomycosis, while presenting much resemblance to the tubercle in gross appearance, is rarely met with in this situation, and on section would show its characteristic structure. The presence of the ray fungus and the absence of the tubercle bacillus would establish the diagnosis.

Gummata simulate the large tubercle closely and, as mentioned, were formerly supposed to be the real lesion in the so-called tubercles of the myocardium. Virchow[25] held this view and laid stress on the presence of an envelope of fibrous tissue around the syphilitic growth. Fuchs has shown that such a fibrous capsule may rarely surround a tubercle. Under such circumstances, in the absence of tubercle bacilli, a diagnosis might be impossible without resort to animal inoculation.

COMPLICATIONS.

Quite a variety of morbid conditions have been observed as a result of the presence of tubercles in the heart muscle. Besides changes in the muscle fibers already described, hypertrophy and dilatation are frequent. Tuberculosis of the endocardium occurs, though rarely. In Townsend's case a large mass compressed the entrance of the pulmonary veins. Kaufmann notes narrowing of the orifice of the canal and pulmonary veins. Classen[26] reports narrowing of the superior vena cava to a mere slit. Frequently the cavity of the right auricle is almost obliterated by the size of the masses in its walls. Thrombi are seen occasionally on the heart wall, especially in the large tubercular form. Instances of this are seen in the reports of Pueschman, Moser and Wells.

The relation of myocardial tuberculosis to tuberculosis of other organs is an extensive and interesting one. As already stated, the lesion in the heart is always secondary to a focus in some other organ, at times found only after most thorough search. On the other hand, the growth in the cardiac muscle may in turn transmit infection to other portions of the body by rupture into the general circulation. Instances of this have already been cited.

Occupying one or the other of these relationships, practically all the organs of the body have been found affected. Lungs, pleura, mediastinal and mesenteric glands, liver, spleen, kidneys, intestines, joints, vertebræ and genito-urinary tract, all of these have been reported.

SOURCE OF INFECTION.

Accepting the fact that the heart is never primarily affected, how does the tubercle bacillus reach the cardiac muscle? Where is most often the primary localization and what the method of transmission to the heart? These questions have been a fertile field for discussion, and while there is now something of a crystallization of opinion on the subject, much room for investigation remains.

The current belief is expressed by Labbe when he says that the source of infection is found most often in the thorax, and that transmission to the heart generally occurs by way of the lymphatic system. In a large proportion of cases tubercular disease of the lungs and bronchial glands is present. We have seen how relatively frequent cardiac tuberculosis is in early life, and we know how general enlarged and tubercular bronchial glands are among children. Hence the theory that the most frequent source of infection is in the tubercular lymph glands of the bronchial and mediastinal groups. In a careful review of the 71 reported cases, I have found mention of enlarged and calcified or caseous bronchial glands in 29, or 40.8 per cent. In 40, or 56.3 per cent., this condition was not mentioned, though in one the cervical glands were affected and in 6 others general tuberculosis was present. In 2 cases only the glands were noted as free from disease, though in one of these also the cervical glands were involved. Considering only the cases in which the glandular condition is noted, 29 out of 31, or 93.5 per cent., are the seat of disease. These figures give much support to Labbe's theory.

From the bronchial glands the process extends to the mediastinal groups and thence to the heart, directly or quite commonly by way of the pericardium. According to Morris[27] the lymphatic vessels of the heart are in three sets, received by as many sets of glands. These glands, the anterior, superior and posterior mediastinal receive tributaries from the front, right side and left side of the heart respectively, in addition to the lymphatics of the pericardium. The anterior group sends its different vessels to the superior group and this in turn to the posterior. The latter communicates with the bronchial glands.

Gerrish[28] follows the same classification and states that the superior mediastinal nodes communicate with the bronchial and deep cervical groups and the posterior mediastinal freely with the bronchial. Thus there is an anatomic ground for the lymphatic theory of transmission. There is needed besides a reversal of the normal direction of the lymph stream. That this is possible has been shown by v. Recklinghausen.[29]

Infection through the agency of the pericardium is very frequent, the avenue of transmission being the same as for the heart directly. In the 72 cases I find adherent pericardium, total or partial, noted in 31 (including my own case), or 43.7 per cent.; also in 31, or 43.7 per cent., no mention, and no pericarditis in 10, or 14 per cent. Of the 31 cases of adherent pericardium, the process was evidently tubercular in 24, as shown by the presence in the adhesions of tubercles and caseous material. In view of the recent studies of Wells[30] and Reisman[31] showing that microscopic examination of what is apparently a mere fibrous pericarditis may reveal a tuberculosis, we may safely assume an even larger proportion to be cases of this nature. From the pericardium the process extends along the lymphatics directly to the heart muscle, most often that of the right auricle. In the 32 cases of this type the right auricle was the chief seat in 21. This accords well with greater age and intensity of the pericardial process at the base of the heart and the immediate relation of the right auricle in this situation.

In tuberculosis of the myocardium, as Tiessier and other writers have shown, associated lesions of the endocardium are rare. My own studies, however, have led me to conclude tentatively that "almost all of the rare instances of true tuberculosis of the endocardium are associated with other forms of cardiac tuberculosis, especially pericarditic."[32]

Infection by the blood has been urged by many observers as the mode of transmission in many if not all cases. I think we have seen good reasons for not accepting such an extreme view. There is, however, little doubt that such blood transmission of bacilli does occur in quite a proportion of cases. In cases in which an acute general tuberculosis exists and the heart lesion is of the miliary variety, this method is most probable. But where we find enormous caseous masses in the heart wall, can this theory hold? If the bacilli were circulating in the blood, derived from, let us say, a pulmonary focus, there would certainly be produced an acute generalized tuberculosis and the heart lesion would never have sufficient time to attain the stage of the large caseous tubercle. The situation of a nodule deep in the substance of the cardiac wall argues no more in favor of the blood than the lymphatic theory, although the contrary has been held. Direct extension from surrounding parts is seen at times, but is a less important and frequent mode than has been generally held.

It seems, then, probable that the mode of infection is most frequently from the bronchial glands by way of the lymphatic system, either directly to the heart or very often with the intervention of the pericardium. A certain but smaller proportion of cases are examples of infection by the blood, while a few are instances of extension by continuity.

TABLE OF THIRTEEN RECENT CASES COLLECTED BY THE AUTHOR.

Reporter.	Type of Lesion.	Probable Primary Focus.	Symptoms.	Remarks.
Pueschman[33]	Large tubercle.	Lungs and bronchial glands.		Adherent pericardium, secondary dissemination by rupture into right auricle.
V. Genersich[34]	" "	Meninges or bronchial glands.		Adherent pericardium, tuberculous erosion of endocardium of right auricle and secondary dissemination.
Thiry[35]	Small tubercle.	Lungs and bronchial glands.		
Eisenmeyer[36]	*a* Large tubercle.		Heart dulness enlarged to right edge of sternum; 1st sound dull at all valves; 2d, pulmonic reduplicated; feeble mitral systolic and barely perceptible mitral diastolic murmurs.	Tubercular pericarditis; sudden collapse and death.
Eisenmeyer[37]	*b* " "		Heart sounds clear; attacks of collapse; quite well in interval; dyspnea and edema at end.	Tubercular pericarditis.
V. Bamberger[38]				
Dunham[39]	Small tubercle	?		" "
Wells[40]	*a* Large tubercle.	Bronchial glands.		
Wells[41]	*b* " "	" "		" "
Crawford[42]	Not classified.	?		
Hlava[43]	Large tubercle.			Adherent pericardium.
Hartog[44]	" "			
Anders	" "	Pericardium (lungs)?	Pleurisy with effusion; heart sounds clear; one attack of collapse; next day sudden death	Pericardium adherent at base; tuberculous areas in lungs.

THE SYMPTOMS.

Little is known of the clinical side of our subject. Among symptoms observed have been palpitation, feeble heart sounds, pericardial distress, diffuse pulsation, tumultuous and rapid heart action, fetal and gallop rhythm, rarely murmurs, sudden and recurring syncope, dyspnea, cyanosis, unconsciousness, general edema, sudden death. In all this list there is nothing specific, no single symptom or combination of symptoms that is not seen in functional and organic disease of the heart other than tubercular. Often the patient dies without a symptom that would attract special attention to the heart. In other cases lesions of the kidneys, liver, lungs, etc., easily suffice to explain the circulatory symptoms present and a heart lesion is never suspected. Fontoynont's patient, with a left-sided pleural effusion, died in an attack of asphyxia supposedly due to the pleuritic condition. Autopsy revealed extensive tubercles in the myocardium.

The history of my case, reported above, is identical. The tuberculous lesion of the myocardium, however, whilst marked, was apparently confined to the right auricle. It is well known that sudden death may occur in sero-fibrous pleurisy, especially in cases in which the heart is greatly dislocated. It has been ascribed to a variety of causes, such as embolism of the pulmonary artery, asphyxia, edema of the opposite lung and myocardial degeneration. The existence of tuberculosis of the myocardium, however, must be reckoned with as a factor in the causation of speedy death in pleural effusion. In Brosch's remarkable case, Weil's symptom-complex was present, due apparently, as shown, at autopsy, to miliary tuberculosis of the liver secondary to the myocardial condition. Other instances might be cited.

The diagnosis has never been suggested, still less made, during life. With autopsy findings before us it is easy to explain the symptoms usually noted. For part, the actual size, extent and pressure effects of the nodular growths are responsible; for the remainder we find a cause in the myocardial degeneration seen to a slight degree in the nodular type and to a greater extent in the diffuse infiltration.

Eisenmeyer believes that the diagnosis may occasionally be made by the presence in a victim of general tuberculosis of attacks of sudden, severe collapse, quickly passing and the detection of weak endocardial murmurs varying in phase and intensity. The short duration of the syncopal attacks and the comparative well-being in the interval, he explains on the ground that the heart muscle is not diffusely altered as in other myocardial lesions and the sound muscle present is able to quickly recover itself. It will be recollected that in my case symptoms of collapse lasting only a few hours occurred on the day preceding sudden death. That this is true except in the diffuse tubercular infiltration we have seen from the investigations of Mendez, Labbe and Sangalli. Along these lines, therefore, seems to lie our greatest hope for success in the future.

I would particularly emphasize the investigation, in a subject of general tuberculosis, of symptoms in any way referable to the heart, no matter if easily explained by coexisting disease of other organs. If the patient has a tubercular pericarditis, another extremely strong indication is present. Unfortunately, even if detected, the condition must ultimately be fatal. Treatment there is none so far as the cardiac tuberculosis *per se* is concerned. If, however, associated tuberculous processes are in evidence, the usual measures, both hygienic and medicinal, must be brought into prompt requisition.

CONCLUSIONS SUGGESTED.

1. Tuberculosis of the myocardium is more common than has been supposed.
2. At present writing not more than three pathologic varieties are justifiable.
3. It is practically always secondary to a lesion in some other situation, most commonly in the bronchial or mediastinal glands.
4. Transmission to the heart occurs most frequently by the lymph stream, less often by the blood current, and more rarely still as the result of extension by continuity.
5. Myocardial tuberculosis in a considerable proportion of cases is secondary to pericardial tuberculosis and the latter to disease of the bronchial glands.
6. The symptomatology is extremely variable and indefinite.
7. Diagnosis is excessively difficult, but is probably possible with great care and under favorable circumstances. In addition to the suspicious features that may be present the existence of generalized tuberculosis and pericardial tuberculosis, one or both, are essential to a diagnosis.

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Applicant's Right to Examine Papers.—The city solicitor of Washington, D. C., has, in an opinion given to the Board of Medical Supervisors, decided that an unsuccessful applicant for license to practice medicine has the right to inspect his papers afterward. The decision was the result of the refusal of the board to permit such inspection by a rejected candidate. —*New Orleans Med. and Surg. Jour.*

A CASE OF SCURVY, WITH UNUSUAL POVERTY OF THE BLOOD.*

JAMES ELY TALLEY, M.D.

PHILADELPHIA.

NARRATION OF CASE.

History.—W. G., white, single, age 32, bricklayer, was in the south of Cuba from August to December, helping in the erection of a mill. His condition when he went was good, as he had spent a vacation at the shore. He was a moderate user of alcoholic beverages, and never had any venereal disease. He was housed well enough, but the water was poor and the food distasteful in almost every respect. The beef that was killed in the morning was eaten for dinner and sometimes for breakfast. Vegetables were scarce, fruit apparently scarcer; and, as everything was cooked by a native cook in Spanish style, the patient could bring himself to eat hardly anything. There were forty men in the party and all but one were sick, usually with malaria or typhoid, although authoritative diagnoses are lacking, as the nearest physician was sixty miles away. The patient in question began to fail gradually, but at no time did he have fever, or was he sick enough to suspect either typhoid or malaria. He gradually lost strength, until finally, in desperation, he traveled the sixty miles to see the Spanish doctor, who told him that he had grave anemia and that his only hope lay in returning at once to the United States, which he did. He reached home very much exhausted, and slept the greater part of five days and nights, awakening only for water and a very little food. His relief was so great at getting home, and his fear of being pronounced tuberculous so genuine, that he steadily refused to see a physician until a few days before his death.

Examination.—On seeing the patient, the most noticeable thing was his breathlessness. It was bad when he lay quiet, but the slightest exertion increased it to a marked degree. The skin was dry and pale where it had been covered with clothing; elsewhere the decided sunburn made any detection of tints impossible. The scleræ were distinctly pearly, the emaciation was moderate, and there was no edema at all. The physical weakness was extreme, the mental apathy less so. There were a few petechiæ on the legs and thighs, but they developed less than forty-eight hours before death. There were no nodes or large subcutaneous ecchymoses anywhere. He said that he had never had a pain nor an ache during his sickness. The pulse was rapid—120 to 130 and above—and at times irregular. The temperature varied from 98 to 100, but it was never found above the latter. Anorexia was complete. The tongue was dirty, and the breath not very fetid. The teeth were good, and the gums not spongy, but of normal hardness and dark in hue. The saliva was not increased. There was an intermittent oozing of dark blood, finally forming a clot at the junction of teeth and gingival mucous membrane. Rarely would more than two teeth ooze at the same time, and the amount of blood was not large. This had probably been occurring intermittently for two weeks. There was a very slight epistaxis once or twice, but no hemoptysis, hematemesis, hematuria or melena after he came home, nor was there any previous history of these conditions. The bowels were obstinately constipated, and there was vomiting for a day, but this disappeared after the large amount of water he craved was reduced. There was a feeble expansile impulse over the precordia, but there was no friction nor thrill. On auscultation there were soft, low-pitched murmurs, heard best near the base, but also heard all over the precordia, and they showed no transmission. The lungs were normal, except for a few moist râles here and there, and the liver and spleen appeared normal. The urine was acid, had a specific gravity of 1016, contained no albumin and no sugar, and microscopically showed only a few uric-acid crystals.

Blood Examination.—This was made by my colleague, Dr. James R. Crawford, the instruments used being the Fleischl hemoglobinometer and the Thoma-Zeiss hemacytometer. The drop that followed the puncture was watery in appearance. The count showed 370,000 red blood corpuscles, 17 per cent. of hemoglobin and 4600 white blood corpuscles. Dr. Crawford fully realized the difficulty of determining with accuracy so low a count of erythrocytes and so small a percentage of hemoglobin, but repeated trials seemed to warrant the figures as given. Unfortunately, no cover-glass slips were made at this time, and the sudden death of the patient precluded the possibility of obtaining them later. The man persisted in leaving his bed contrary to orders, and died suddenly of syncope.

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

The postmortem examination was made by Dr. R. M. Pearce and the following is his report:

External Appearance.—Body of a well-developed, poorly nourished male about 30 years of age. Extreme pallor of skin; small amount of subcutaneous fat. Muscles dark red.

Abdominal Cavity.—A few petechial hemorrhages in mesenteric fat. Intestines contracted, smooth and glistening on their outer surface. No fluid; no adhesions. Appendix normal. Mesenteric lymph nodes hardly visible.

Pericardium.—Contains an excess of cloudy straw-colored fluid with a slightly bloody tinge. In this fluid there are several small jelly-like masses of coagulated serum and fibrin slightly reddish in color. Beneath the visceral layer of pericardium are innumerable closely set, often confluent hemorrhages. These hemorrhages are most numerous over the surface of the left ventricle and left auricular appendage, though some are found in all parts of the heart. The serosa is slightly cloudy. On section the hemorrhages are found to extend for a slight distance in places into the myocardium. All large vessels leading to and from the heart opened *in situ*. No evidence of thrombosis or embolism.

Heart.—Valves and cavities normal. Myocardium, on section, distinctly yellowish-white in color, soft, friable and easily torn. From the endocardial surface irregular mottling and streaking can be seen. In places beneath the pericardium are seen the minute hemorrhages described above. In the meshes of the left auricular appendage are very small grayish-white accumulations suggesting ante-mortem coagulation. Aorta normal.

Lungs.—Distended; edematous throughout. On pressure large amounts of watery, frothy fluid can be expressed. There is no evidence of pneumonic solidification. The bronchi contain a white mucoid fluid. Pleural cavity: no fluid, no adhesions.

Spleen.—Small; capsule smooth. On section, no increase of fluid; markings normal.

Esophagus, Stomach and Intestines.—Examined throughout entire extent but show no lesions of any character. The lymphatic structures are not hyperplastic. There is no injection. A large amount of mucus is found in the upper portion of ileum and jejunum. The pancreas was normal.

Liver.—Surface smooth. On section, very extensive fatty degeneration giving the liver a diffuse yellowish appearance, revealed here and there by the injected centers of the liver lobules. Consistence is much diminished. Gall-bladder and ducts normal.

Kidneys.—Capsule peels readily leaving a smooth surface. On section, kidney is almost bloodless; pale yellowish in color. Relations between cortex and pyramids normal. The normal markings of cortex can not be made out; consistence diminished.

Adrenals.—Cortical portions normal in appearance. The medullary portion stands out very prominently; is firm and of the consistence and appearance of lard. The relations between cortex and medullary portion normal. Pelvis of kidney, ureter and testicles normal.

Prostate and Testicles.—Normal.

Femur.—Examination of bone marrow shows normal fatty appearance of adult marrow.

Examination of head and mouth not allowed.

Note.—The anatomic conditions taken into consideration with the clinical symptoms appear to confirm the diagnosis of scurvy, the anemic and fatty degeneration resulting from frequent hemorrhages.

Anatomic Diagnosis.—Profound anemia, fatty degeneration of heart, liver and kidneys, petechial hemorrhages of pericardium and mesenteric fat, hydropericardium and edema of lungs.

CONDITION OF THE BLOOD IN SCURVY.

The three points of especial interest in the case are the condition of the blood, the gums and the pericarditis. In reviewing the various studies of the blood made in scurvy, it must be borne in mind that some cases were studied early and some late; some were mild, some grave; some had large hemorrhages, some small or none; and some had little, others widespread serous inflammations and effusions—any one of which conditions might modify the blood count. However, disturbing factors aside, enough is known to warrant the broad conclusion that in scurvy there is no blood change characteristic of the disease. Except in mild and early cases, there is a moderate diminution of the red blood corpuscles. Suckling[1] reports a case with the appearance of extreme anemia, in which the number of erythrocytes was 1,290,000, and the leucocytes normal; White,[2] a case with 2,000,000. In Henry's[3] series of cases the lowest count was 1,980,000; the average, 3,000,000 to 4,000,000, and in one case over 5,000,000. The average counts made by Uskow,[4] Leven,[5] Variot,[6] Wegschneider,[7] Dugnet and Duplais,[8] and Lamb,[9] were about the same as Henry's. The lowest count found, 557,875 erythrocytes, was made by Bouchut[10] in a case of scurvy, four weeks after the onset of a serious epistaxis. Fifteen weeks later the same case showed 3,625,000.

The amount of hemoglobin is usually reduced. A case of Henry's, with 2,775,000 erythrocytes, showed 30 per cent of hemoglobin; another, with 3,310,000, gave 35 per cent.; and a case with over 5,000,000 gave 65 per cent. White's case, with 2,000,000 erythrocytes, showed 20 per cent. of hemoglobin. The hemoglobin is reduced more quickly and more decidedly than the erythrocytes; and as recovery takes place, the latter increases more rapidly than the former. This disproportion between the red blood corpuscles and the hemoglobin is sometimes sufficiently marked to give the blood the chlorotic characteristic. In severe cases, and especially in those with large hemorrhages, Wjernsekki[11] and others have found poikilocytes, macrocytes and microcytes. Penzoldt[12] has observed granular corpuscles from one-quarter to three-quarters the size of normal corpuscles, which he believes to be the early stages of new erythrocytes. Others have also noted this tendency to regeneration in cases not too grave.

The leucocytes, in pure cases of scurvy and those free from complications, are usually somewhat reduced. However, any complication may disturb the ratio. Two of Henry's cases each showed a leucocytosis of 20,000; and Stengel[13] says that in cases of scurvy with severe hemorrhages, leucocytoses of from 15,000 to 40,000 may be found. Some observers have found the eosinophiles increased.

In a patient who had not had large hemorrhages, a count of 370,000 erythrocytes per cubic millimeter, with an increased individual corpuscular richness in hemoglobin (17 per cent. to 370,000) suggests pernicious anemia, even where no microscopic study was possible. The statement of Wjernsekki that the graver the cases of scurvy, the more macrocytes, microcytes and poikilocytes, and the fewer erythrocytes and the less hemoglobin there were, is also suggestive. However, I have not been able to find that any case of scurvy has terminated in pernicious anemia. The idea that there may be some relation between the two diseases has already been suggested more than once. Liston and Reilly[14] report finding ova of *Anchylostomum duodenale,* and state that grave cases were cured after the use of thymol; therefore, scurvy may be considered a variety of pernicious anemia, due to *Anchylostomum duodenale.* Lamb and others have examined the stools in their scurvy patients without finding any ova.

The gum symptoms in scurvy are important, and often they alone almost determine the diagnosis. However, their absence is not infrequent; and if they are present, the severity of the gingivitis may have no relation to the severity of the other symptoms. In the young, with sound, clean teeth, and in the old, where teeth are absent, the gum symptoms may be entirely wanting. When present the gingivitis appears earliest and is most marked about carious and broken teeth. In McGrew's[15] series of 42 cases, there were 11 that had no gum symptoms. In Berthensen's[16] 225 patients, only 85 had gingivitis; and of these, but 17 had hemorrhage from the gums. Herrmann[17] found healthy gums 31 times in 141 patients; Kirschenberger,[18] 26 times in 116 patients; Tholozan,[19] in 79 autopsies, found changes in the gums but 7 times; Sampson and Himmelstern[20] report that early in the Moscow epidemic of 1840 the gums were pale and thin; later in the epidemic, the gingivitis became more pronounced.

Scorbutic pericarditis, according to the various authorities,[21] is not so frequent as pleurisy, but more frequent than scorbutic peritonitis. It is a very grave complication, being always associated with degeneration of the heart muscle. It may come early or late; it may be insidious or frank. It produces very early collapse symptoms, the pericardium constantly transuding new quantities of blood. The symptoms and signs of pericardial effusion vary as in ordinary pericarditis.

PATHOGENESIS OF SCURVY.

The ravages of scurvy to-day are nothing as compared with earlier times, before Lind[22] (1779) and Blane[23] (1785) introduced the use of lime juice on board ships, and when armies in active service had a haphazard commissariat and paid little attention to hygiene. The disease now may be sporadic, endemic and occasionally epidemic. It may occur in any climate, as India, Arabia and Russia. It occurs frequently in northern Russia and occasionally becomes epidemic. Hoffmann[24] suggests that it may not be so infrequent elsewhere as supposed, for mild cases are often overlooked. The spring is the most common time; but no season is free, no race is exempt, and age and sex have little influence—though the aged, because of their impaired vitality, are more prone to contract it. Overfatigue, mental depression, nostalgia, insufficient light and air—as in overcrowded ships, almshouses, hospitals and jails—and bad water are all predisposing causes. Scurvy may complicate or follow certain diseases, as dysentery, typhoid fever, tuberculosis, pneumonia, malaria and rheumatism. Dohrn[25] reports several cases in which the mother transmitted the disease to the unborn fetus.

The formal theories regarding the cause of scurvy are:

1. Nutritional; that it is due to a diet wanting in fresh vegetables.
2. Toxic; that it is due to eating tainted food.
3. That it is an infectious disease.

THE NUTRITION CAUSE THEORY.

There is reason for believing that improper diet alone may cause scurvy. Henry has reported cases in which the diet was, respectively, ham, fresh meat, farinaceous food, bread and chocolate; McGrew, cases in which the diet was bread, strong coffee and meat; Osler,[26] a dyspeptic who lived for months on bread and tea; Amburger,[27] a woman who lived on chocolate and a man who ate only meat. The large number of cases of infantile scurvy, due to the feeding of condensed milk and patented foods, is interesting in this connection. As Hoffmann says, such unfit food may act as a predisposing cause, by creating gastric and intestinal disturbance. Bachstrom,[28] in 1734, was the first to claim that a lack of vegetables was the cause of scurvy. Ever since that time a prolonged diet wanting in vegetables and fruits, and their contained acids and salts, has been recognized as the most important factor in the etiology of the disease. Garrod[29] claims that this lack is the potassium salts; Ralfe,[30] that the disease is due to diminished alkalinity of the blood, because of the absence from the food of the vegetable salts—malates, citrates and lactates—the alkalinity of the blood depending on the carbonate, which is derived directly from these salts. The same results are produced in scurvy as when the normal alkalinity of the blood is reduced by injecting acids or by feeding them in excess to animals—dissolution of the corpuscles, ecchymoses, blood stains on the mucous membranes and fatty degeneration.

In this connection it is interesting to note that Albertoni[31] finds the total acidity reduced, and sometimes absent, in the gastric juice of scorbutics; he also finds the acidity of all the body fluids diminished. Wright[32] claims that scurvy is an acid intoxication, with diminished alkalinity of the blood. He reports 7 cases in which the alkalinity of the blood was much reduced. Lactate of soda, added to the blood, increased its acidity at once. He supposes that the condition is due to the ingestion of an excess of mineral acids over the bases. Lamb reports 11 cases, in some of which the blood alkalinity was reduced; but lactate of soda had no curative effect.

THE TOXIC CAUSE THEORY.

The disease is due to some organic poisonous substance in the food, which is the product of decomposition. The experiments of Jackson and Harley[33] and of Vaughn[34] seem to prove that tainted meat may produce scurvy. Monkeys fed on rice and fresh meat did not get the disease; fed on rice and tainted meat, or on rice, tainted meat and a banana or apple, they did get it. Neale[35] and twenty-five other men lived upon fresh frozen meat and blood, in the Arctic regions, and did not contract scurvy. A similar expedition of twenty-two men refused to eat fresh frozen meat and blood, but lived on tinned vegetables and lime juice, and almost all had scurvy. Jürgensen[36] reports a case of land scurvy in which the sole diet was vegetables.

THE INFECTIOUS CAUSE THEORY.

Scurvy is considered an infectious disease, although no definite micro-organism is yet acknowledged. Berthensen believes in the infectious theory, and that there is a marked predisposition among the insufficiently nourished. He argues that the disease usually begins in a circumscribed focus; as, a ship, house, prison or town. In epidemics this primary focus can usually be found, if carefully sought out. In hospital epidemics many patients, some robust, enter the hospital with no signs of scurvy and acquire it there. Many cases so acquired are among those having wounds. That the disease occurs endemically and epidemically, and shows a sudden increase in certain months and years, is best explained by the infectious theory. Again, the disease is not confined to man, but has been found in horses and dogs

(Dieckerhoff[37]), and in the gorilla, goat and sheep (Le Roy de Mericourt[38]); and it has been experimentally produced in rabbits by injecting the blood of scurvy patients (Murri and Petroni[39]). Norriski[40] goes even further and suggests that the disease may be contagious, basing his assertion upon the fact that certain people, with the best surroundings and food, though neglecting even the elementary precautions of disinfection after direct contact with scurvy patients, developed the disease.

Acting upon the supposition that the disease was infectious, various investigators have sought for a definite micro-organism. Borntraeger[41] isolated a coccus from the minute hemorrhages in the spleen of persons dead of the disease. Home[42] believes that the scurvy is an infection of the mouth with various micro-organisms from decayed food. This infection is most likely to occur in times of hardship, when cleanliness is least within reach. He suggests that lime juice and fresh vegetables, or their acids, act as antiseptics.

Babes[43] thinks that scurvy is a hemorrhagic infection. The virus enters the mucous membrane of the gums, and is absorbed from there into the surrounding blood vessels. He discovered fine bacilli in excised pieces of gums. Rabbits, when injected with bouillon containing pieces of the gums, had hemorrhages, and died after six to eight days with symptoms like scurvy. The blood and urine of his scurvy patients, when injected, did not produce the disease. He secured pure cultures of this bacillus, and differentiated it from the streptococci, also present in the gums. He believes this bacillus to be the cause of the gingivitis, and that it exists normally in the mucous membrane of the mouth, but can act only under conditions which diminish the resisting power of the body.

Testi and Beri[44] describe a micro-organism found about the teeth which they believe causes scurvy. It is a diplococcus, stains in all the anilin dyes, resists Gram's stain, renders gelatin fluid, and causes a saw-dust-like deposit. Experimentally, lesions similar to those in scurvy were produced. They consider the disease a toxemia.

CONCLUSIONS.

1. There is no condition of the blood characteristic of scurvy.
2. Gingivitis is not a constant symptom of scurvy.
3. In certain scurvy cases there is a condition of the blood similar to that existing in pernicious anemia, though any definite connection between the two diseases is not demonstrated.
4. The most important element in the causation of scurvy appears to be a diet lacking in vegetables or their ingredients. Tainted food may produce it, and an exclusive diet of perfectly fresh meat and blood may prevent it.
5. The infectious theory is gaining a strong foothold among the authorities, although no definite micro-organism is acknowledged.

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DISCUSSION.

Dr. Abraham Jacobi, New York—*In adults I have seen but few cases of scurvy; in infants I have seen a great many, but I am afraid I have nothing new to say. Regarding the condition of the gums, it is still considered a debatable ground. Some still believe that, in infants with scurvy, the gums must always be affected. On the other hand, it has been stated that, when there are no teeth, in children two, three, four or five months old, there will be no bleeding and no other scorbutic symptoms about the gums. Both of these statements are incorrect, to judge by a good many such cases I have observed. I can recall many seen in early infancy, no teeth being present, in which there were the symptoms on the gums of scurvy as found in older children. On the other hand, there has been an absence of sponginess and bleeding of the gums in babies who had a number of teeth. The condition of the gums is not at all conclusive so far as the diagnosis of scurvy is concerned. So far as the etiology is concerned in infants, I think everybody knows what I can say about it. I have found that over-sterilizing the milk will give rise to scurvy; I have seen such cases before 1894, when I referred to that subject in my address on scurvy before the International Medical Congress of Rome, and have seen many more cases since; though it would be a mistake to consider the exclusive use of sterilized milk in the feeding of babies the only cause of scurvy.

SOME PHYSIOLOGIC FACTORS INVOLVED IN THE ORIGIN OF SCURVY (SCORBUTUS).

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Scarcely any disease has afforded opportunity for such abundant speculation and investigation as scurvy.

Till within the last twenty years its ravages among maritime and military ranks were appalling, and it has been largely due to the work of Lind, Garrod, Buzzard, Chalvet, and particularly that of Ralfe, that our knowledge of its etiology, prevention and treatment has reached a stage where it can be expressed in definite terms.

VARIOUS OPINIONS ON ETIOLOGY.

The causes in which the origin of scurvy have been sought have been indeed, in many cases, in no way related, each theory has had its grains of truth, but has failed to explain all and it is our purpose to correlatethese various observations and refer them to simple terms.

Lheridon-Cremorne[1] sought its cause in nostalgia, Gueit[2] in mental depression, Murray[3] in despondency and hypochondria, Fabre[4] in a vasomotor disturbance induced by some micro-organic activity, Aldridge in a general want of mineral material in the food and diet of the system as well as in the system itself, Villemin, Stengel,[5] Babes,[6] Boruträger,[7] Berthensen,[8] in an infection, others in fear, anxiety, salt food, fatigue and exhaustion, indolent habits, lack of exercise, bad water, etc.

In 1734 Bachstrom[9] formulated the idea that its cause lay in a deficiency of fresh vegetable material in the diet, and this idea was the basis for the work of Garrod, Buzzard and Ralfe.

Garrod[10] compared the chemical composition of diets whose use gave rise to scurvy with those whose use was either preventive or curative, and he concluded that, "in all scorbutic diets potash exists in much smaller quantities than in those which are capable of maintaining health, and that all substances proved to act as anti-scorbutics contain a large amount of potash." But we should expect that the converse of this last statement would be true if Garrod's theory were the whole truth. However, the converse statement, that all substances which contain potash in large quantities act as anti-scorbutics, was shown not to be true by Murray,[11] Bryson[12] and Grant.[13]

Then Buzzard advanced the idea of Garrod one step further by assuming it not to be the lack of potash alone, but a lack of potash in combination with organic acids, such as citric, tartaric, malic, etc., either as acid or neutral salts. He says: "All anti-scorbutic juices contain salts of citric, tartaric or malic acids and we have no evidence of any substances which contain these in considerable quantity and are yet deficient in the power of preventing scurvy. The mode by which they act is still involved in obscurity." Chalvet[15] explained this last point of difficulty in Buzzard's theory by showing how the ingestion of salts of the organic acids with the alkalies gives rise to the formation of carbonates in the blood. But, he says, the potash in meats, dry and leguminous vegetables is not absorbed because it exists in some more stable form, as, for example, the chlorid, sulphate or phosphate.

THE INVESTIGATIONS OF RALFE.

But it was Ralfe's excellent work[16] that showed what rôle the transformation of alkali salts of organic acids into alkaline carbonates plays in the disease. He showed that the withdrawal of fresh vegetables from the diet caused the composition of the urine to approach (with exceptions which he explained) that of scorbutic urine qualitatively and quantitatively; he further showed that administration of anti-scorbutic diet to scurvy-stricken patients caused the composition of the urine to approach the normal. Ralfe then concludes: (a) That the primary change which occurs in scurvy is a chemical alteration in the quality of the blood; (b) that this chemical alteration, as far as can be judged by inferences drawn from analysis of the urine of patients suffering from scurvy, and analysis of scorbutic and anti-scorbutic diets, points to a diminution of the alkalinity of the blood; (c) that this alkalinity of the blood is produced in the first instance (physiologically) by an increase of acid salts (chiefly urates) in the blood, and finally (pathologically) by the withdrawal of salts having an alkaline reaction (chiefly alkaline carbonates); (d) that this diminution in the alkalinity of the blood finally produces the same results in scurvy patients as happens in animals when attempts are made to reduce the alkalinity of the blood (either by injecting acid into the blood or feeding with acid salts), namely, dissolution of the blood corpuscles, ecchymoses and blood stains on the mucous surfaces and fatty degeneration of the muscles of the heart, the muscles generally and the secreting cells of the liver and kidney."

THE PATHOLOGY OF SCURVY.

This leads us to inquire what are the pathologic and anatomic changes produced in the system under the influence of scurvy. There is a general tendency toward ecchymosis formation, extravasation, mucous hemorrhage, edema of many tissues, especially subcutaneous, the lungs and lower extremities, and a more or less extensive fatty degeneration of the skeletal muscles and also of visceral organs, particularly the heart, liver and kidneys; there is also a diminution in the number of red blood corpuscles and the hemoglobin in them, also strong alterations in the composition of the urine as Ralfe[16] showed. The question now arises as to what are the factors involved in the production of these pathologic states—what are the conditions which give rise to them?

Death produced by long suffocation, by carbon monoxid poisoning, by sufficient diminution in the partial pressure of the oxygen in the air, by sufficient increase in the partial pressure of the carbon dioxid in the inhaled air, by dyspnea induced in any way and extended over a sufficiently long period of time—all these produce some or all of the effects which are characteristic of scurvy.

Munk and Leyden[17] and many observers since them[18] have shown that phosphorus poisoning may lead to a general fatty degeneration of the liver, lungs, heart, muscles, to visceral ecchymoses and bloody extravasations. Similar pathologic changes can be produced in various ways, notably by the prolonged use of poisons.[19]

Now inspection of all these various conditions forces one to the idea that they are all characterized by a lack of oxygen for the consumption of the tissues. Loeb[20] advanced the idea that edema is caused by lack of oxygen in the tissues. He says: "These facts can leave no doubt that the absorption of water by the muscles with its vessels ligatured is caused by chemical alterations in the muscles which are probably induced by a lack of oxygen." Loeb further says that these chemical alterations in the cells cause an increase in the osmotic pressure in the cell and thus water is absorbed from the blood or lymph. Loeb[21] also showed that lack of oxygen prevented cell division in *Ctenolabrus* egg and caused a disappearance of the cell walls, that is to say, brought growth to a standstill and led to a dissolution of already existing morphologic structures. He also observed that the heart of *Ctenolabrus* embryo under withdrawal of the oxygen supply came to a standstill before any appreciable diminution in the frequency of the heart beat.

The action of phosphorus as a poison, as mentioned above, is very pronounced and its pathologic effects may be considered as almost typical of the general effects of the lack of oxygen on higher organisms.

Thus it seems very probable that the ecchymoses, hemorrhages, extravasations, edema and fatty degenerations of scurvy are due to chemical changes produced by the lack of oxygen.

THE STATUS OF THE BLOOD.

The rôle which the blood plays in all these phenomena is very important; aside from its being ultimately the nutrient medium for the cells, it serves the double purpose of (1) neutralizing the acid products formed in the tissues under normal and pathologic conditions, as well as (2) maintaining a medium surrounding the tissues sufficiently alkaline that the processes of growth and oxidation may go on normally.[22]

Walther,[23] Loeb,[24] and others have shown the deleterious effects of acids, i. e., hydrogen ions, upon growth, development and life duration. The conclusions of Ralfe[16] with regard to the rôle of blood alkalinity receive support from the work of Araki,[25] who found that the poisonous effects of carbon monoxid and some other substances which produce lack of oxygen in the tissues, are very markedly diminished by injections of alkali. and after such injections of alkali, lactic acid appeared in the urine as the alkali salt.

Although direct observations have not been obtainable with regard to the presence or absence of lactic acid in the urine and blood, and of glucose and albumin in the urine, it seems most probable that they will be found to exist in scurvy patients in quantities very much over the normal.

It is also to be expected that hypodermic injections of sodium carbonate, or disodium phosphate in either Ringer's solution or physiologic salt solution (or better in such strength of Ringer's solution as will make the resultant solution isosmotic with a normal Ringer's). would be found very serviceable in aggravated cases of scurvy.

When we consider that the effect of nostalgia, mental depression, fatigue, disease, poor food, etc., is a tendency toward a reduction in the "tonus" of the system, chiefly through alterations in the processes of nutrition, it becomes clearer that their relationships to scurvy as pathogenic agencies can only be secondary, although they may become serious as complicating factors.

SUMMARY.

1. The direct cause for the appearance or continuance of an attack of scurvy does not depend upon the activity of micro-organisms although the latter may establish conditions favorable to the onset of scurvy or aggravate a case already existing.

2. The direct cause for the appearance or continuance of an attack of scurvy lies in the establishment of the condition known as "lack of oxygen" in the tissues.

3. Those conditions which tend to prevent the formation of acid. i. e., of hydrogen ions (and possibly other products also) in the tissues and tend to increase the store of available alkalinity, i. e., hydroxyl ions, in the blood and lymph, are the conditions most antagonistic to the development of scurvy or its continuance, and those most favorable to its cure.

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TRAUMATIC RUPTURE OF THE ABDOMINAL VISCERA WITHOUT EXTERNAL SIGNS OF INJURY.*

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(Concluded from p. 1036.)

PROGNOSIS.

Until 1890, when laparotomy first was systematically employed as a means of treatment in this class of injuries, the mortality was a very high one. In 1887 Edler collected 96 cases (uncomplicated) of rupture of the liver, of which 21, or 21.8 per cent., recovered and 75, or 78 per cent., died. Of rupture of the spleen (uncomplicated) only 8 recovered spontaneously, or 15.8 per cent., and 44, or 84.6 per cent., died. Of ruptures of the kidney (uncomplicated) there were 55 cases, of which 36, or 65 per cent., recovered and 19, or 35 per cent., died. Since laparotomy was not performed in any case the recoveries must be regarded as spontaneous ones. In 1896 Petry collected 160 ruptures of the intestine, of which 149, or 93 per cent., died and 11, or 7 per cent., recovered. He also collected 23 perforations of the stomach due to subcutaneous injury, of which 13 died, or 59 per cent., and 40 per cent. recovered through formation of adhesions or abscess formation. Those cases of perforation of the intestine which recovered did so ten times through fecal abscess formation and once through adhesions. In 1878 Bartels collected 169 cases of extraperitoneal rupture of the bladder with 89 per cent. mortality. In 1896 Kuster found that of 222 cases of rupture of the kidney (uncomplicated) 30 per cent., or 67, died. Of these 30 died of hemorrhage alone.

From the above we have sufficient grounds to answer those who still believe in the expectant treatment, that left to themselves an average of over 80 per cent. of the cases of rupture of the spleen and liver will die and 93 per cent. of the cases of rupture of the intestine and 89 per cent. of those of the extraperitoneal and an even higher percentage of the intraperitoneal ruptures of the bladder (98 per cent.). The outlook in ruptures of the kidney left to themselves is perhaps a little better. Of the variety in which there is no communication with the peritoneal cavity 30 per cent. will die, and if the peritoneum is lacerated practically all will die. (In 14 cases of such rupture not operated upon all died, according to Kuster). Injuries of the pancreas and gall-bladder have a fair prognosis when left alone. Many of the former have collections of bile in the abdominal cavity which may not cause death. Of 34 cases, 22 died (Courvoisier). In the case of the pancreas about 50 per cent. die. When large blood vessels (portal vein, branches of celiac axis or renal vessels) are torn, death is the rule.

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UPTU SPLEEN OPERATED ON.

o.	Name of Operator and Journal.	Patient and Inj	Symptoms.	Extent of Injury and Treatment.	Result.
1	Riegner. Berl. Klin. Woch., 1893, No. 8.	Fell from second story. Boy, 14 years.	Shock and symptoms of internal hemorrhage. Dulness in flanks and hypogastric region.	Laparotomy, 24 hours later. Showed spleen transversely severed, so that lower half lies free in peritoneal cavity. Upper half still attached to non-torn vessels. One and a half liters free blood. Splenectomy.	Recovery. Amputation of left thigh four weeks later, on account of gangrene of leg. Marked swelling of inguinal, axillary, cubital, cervical glands. One month after splenectomy.
2	Pitts and Ballance. Trans. Clin. Soc. (London), vol. xxix, 1896.	Struck by cricket ball on left side, five days before admission. After struck had stomach ache; then felt well for four days, and then suddenly severe. Boy, 10 years.	Collapse, very anemic, abdomen motionless, very tender on pressure, especially in left hypochondriac region. Dulness in both flanks, changing on right side.	Laparotomy (five days after accident). Splenectomy. Large rupture on phrenic surface, extending deeply into parenchyma, and involving vessels of hilum. A spleniculus was left.	Recovery. Enlargement of lymph glands during convalescence. Blood three months later: R., 5,040,000; W., 17,000; H., 75 per cent.
3	Pitts and Ballance. (See above.)	Run over by hansom cab. Woman, 45 years old.	Shock, extreme collapse and intense pain on left side, a few drops of blood in urine. Dulness in left flank, which did not move with change of position.	Laparotomy (a few hours after injury), on account of increasing internal hemorrhage. A deep rupture on gastric surface extending into hilum. Splenectomy. Clots removed.	Recovery. On eighteenth day she showed signs of severe anemia. This disappeared on feeding extract of spleen, bone marrow and arsenic. Had pains in abdomen, humerus, and over tibiæ during convalescence. Three months later glands slightly swollen. R., 4,660,000; W., 12,000; H., 74 per cent.
4	Pitts and Ballance. (See above.)	Eight hours before operation fell across an iron girder. Man, 36 years old.	Very pale, later splenic dulness, increased collapse. Dulness in both flanks, great pain in abdomen.	Laparotomy (eight hours after injury). Extensive tear on gastric and renal aspects into hilum. Splenectomy.	Recovery. Three weeks after operation, signs of severe anemia. Disappeared after same treatment as No. 3.
5	Pierson. N. Y. Med. Journal.	Ten years. Thrown from sleigh against a post, striking on left side.	Collapse, severe pains in left hypochondriac region, radiating to left shoulder. Tympanitic. Vomiting, and rapid pulse.	Laparotomy (20 hours after injury). Rupture extending through hilum. Tamponade of wound.	Slow recovery.
6	V. Beck. Münch. Med. Woch., 1897, p. 1319.	Nineteen years old, male. Run over.	Collapse and symptoms of internal hemorrhage. Diagnosed rupture of spleen.	Laparotomy. Tear on concave aspect close to hilum, extending through entire parenchyma; also several tears on convex aspect. Spleen 15x8x4 cm. Splenectomy.	Recovery. Marked anemia for ten weeks. No lymphatic enlargement.
7	Trendelenburg. Deut. Med. W., 1899, No. 40.	Seventeen years old, male. Struck on left side.	Rode home after injury. Half hour later pains in abdomen, vomiting, signs of internal hemorrhage. Dulness in flanks and hypogastric region.	Laparotomy, six hours after injury. Extensively lacerated spleen. Splenectomy.	Recovery. Slight transitory swelling of glands.
8	Krabbel. See Arch. Klin. Chir., vol. lx, p. 964.	Fell from ladder. Boy, 9 years old.	Severe shock and signs of internal hemorrhage, and pains in right side.	Laparotomy (same day). Rupture of spleen. Tamponade. A portion of spleen lay loose in abdominal cavity.	Recovery. Swelling of inguinal and cubital glands. H., 80 per cent. Four weeks after operation.
9	Savor. Centralblatt f. Gynaekologie, 1898, No. 48.	Kicked in left side of abdomen in sixth month of pregnancy. Thirty-one years old.	Signs of internal hemorrhage.	Laparotomy. Splenic rupture found. Splenectomy.	Recovery. No influence on mother and child.
10	Ballance. The Practitioner, 1898, p. 797.	Boy, in falling ten feet, struck abdomen on stone.	Collapse. Pain in abdomen, most marked on left side of abdomen. On following day was worse, showed signs of internal hemorrhage.	Laparotomy (?) Rupture of spleen. Splenectomy.	Recovery. Swollen cervical and axillary glands after operation.
11	Delbet. Gaz. des Hôpitaux, 1898.	Struck on abdomen. Walked long distance after injury. Boy, age not given.	Gradual onset of signs of internal hemorrhage, with pains in right side of abdomen. Dulness on left side.	Laparotomy. Rupture of spleen several centimeters long. Large intraperitoneal clot. Splenectomy.	Recovery.
12	George Heaton. Brit. Med. Jour., 1899, i.	Boy, 9 years old. (?)	Signs of internal hemorrhage.	Laparotomy. Two-thirds of spleen torn into small pieces. Splenectomy. Clot not removed.	Slow recovery. Very critical condition at first.
13	Perthes. Deut. Med. W., 1899, No. 40.	Run over.	Immediate unconsciousness. Pulse irregular, 72. Abdomen not rigid. After 24 hours sudden severe abdominal pains. Marked rigidity of abdominal walls; made diagnosis of perforation of intestine.	Laparotomy (24 hours after injury). Large clot. Rupture of spleen. Splenectomy. Tear in convex surface along entire length, 1 to 1½ cm. deep.	Recovery.
14	Bardenheuer. Deut. Med. Woch., 1897.	Man, fell 12 feet. Had fracture of sixth and seventh ribs (left), and hemothorax.	On eleventh day after injury suddenly grew worse. Fever and signs of peritoneal irritation.	Laparotomy. Evacuated large encapsulated clot, beginning to suppurate. In its middle lay spleen, enlarged to double its size, and ruptured. Splenectomy. Large tear on convex surface. Vessels at hilum torn across.	Recovery.
15	Vincent. Revue de Chirurgie, 1893.	Man, 36 years. Had a malarial splenic tumor. Fell from tree.	Signs of internal hemorrhage and pain in splenic region. Dulness on left side. Increasing peritonitic irritation symptoms and dyspnea.	Laparotomy, eleventh day after injury. Removed clot, but left spleen surrounded by clots.	Recovery in four months.
16	Mauclaire. Bull. Soc. Chir., Paris, July 2, 1901.	Male, kicked by horse in left hypochondrium.	No signs of internal hemorrhage until second 24 hours.	Laparotomy, 24 hours after injury. Spleen cut into several *segments*. Splenectomy.	Recovery.
17	Coville. Bull. Soc. Par., Dec. 10, 1901.	Female, 65 years. Fell from window.	Went about work until tenth day, when entered, with large fluctuating swelling over splenic region. Diagnosed hydronephrosis.	Lumbar incision, first made, negative. Laparotomy. Found circumscribed cavity filled with blood, and at bottom greatly enlarged and torn spleen. Splenectomy.	Recovery.
18	Lewerenz. Arch. Klin. Chir., Bd. 60.	Male, 27. Run over by wagon.	Severe abdominal pain. Gradually increasing signs of internal hemorrhage. Dulness in flanks, especially in right side.	Laparotomy, four hours after injury. Large amount of free blood in peritoneal cavity. Splenectomy. Two large transverse tears	Recovery. Some psychical disturbances (transitory). Gradual recovery of blood to normal.

19	Loison. Bull. et Mem. Soc. Chir., Jan. 23, 190	Male, 23. Kicked over left hypochondriac region by horse.	rtly after injury vomited several times. Blood in urine. Fracture of posterior ends of seventh and eighth ribs. Dulness around umbilicus, and in flanks. Rigidity of abdominal walls. Pulse, 80. Tympanites increasing.	Laparotomy, 30 hours after injury. Intraperitoneal clotted and liquid blood. Blood coming from spleen, which showed a tear on convex surface. Tamponed wound.	Recovery.
20	*J. Bell. Brit. Med. Jour.*, 1901, vol. I, p. 178.	Male. Struck on abdomen.	Well marked dulness in both flanks, and great pain in epigastrium.	Laparotomy, eight hours after injury. Splenectomy. Transverse complete rupture of spleen. Weighed one pound.	Recovery.
21	Krabbel. Deut. Med. Woch., 1899, No. 36.	Boy, 9½. Fell from ladder on abdomen.	Vomited twice. Pain in right side of abdomen and liver. Dulness in lower part of abdomen. Gradually increasing weakness and pallor.	Laparotomy, five hours after injury. Two pieces of spleen torn off. Removed remaining portion.	Recovery.
22	Madlener. Münch. Med. Woch., 1899, No. 43.	Female, 57. Fell on edge of pail, striking left side of abdomen.	Collapse and signs of internal hemorrhage. Dulness in left flank.	Laparotomy, seven hours after injury.	
23	Eichel. Münch. Med. Woch., 1901, No. 42.	Thrown from horse. Male, 23.	Marked shock and pallor. Abdomen very tender. Dulness in left flank. Symptoms of internal hemorrhage increasing.	Laparotomy, eight hours after injury. Spleen showed one longitudinal and two transverse tears. Splenectomy.	Recovery. Six weeks after operation, 4,200,000 reds. H., 80 per cent.
24	Cohn. Münch. Med. Woch., 1900, May 1.	Male, 17. Struck over left side of abdomen by mallet thrown at him.	Pain immediately over region struck, and fainted. Recovered after being taken home, and walked to physician on fourth day after injury. On account of increasing anemia and fainting spells, came to hospital, six days after injury. Very anemic, and dulness over left flank.	Laparotomy, eight days after injury. Large tear extending from hilum to convexity. Splenectomy. Spleen, 16½x8½x3½ (due to anemia).	Recovery.
25	Jordan. Münch. Med. Woch., 1901, No. 3.	Male, 23. Thrown from horse.	Severe pain, pallor; pulse, 66; vomiting; marked rigidity of abdominal muscles. Splenic dulness increased. Signs of internal hemorrhage, increasing under observation.	Laparotomy, eight hours after injury. Transverse tear of spleen, going through entire parenchyma. Splenectomy.	Recovery
26	Wilms. Münch. Med. Woch., No. 12, 1902, p. 503.	Female, 30. Fell from ladder on left side.	Severe pain and collapse. Dulness in left lumbar region.	Laparotomy, 4½ hours after injury. Spleen extensively torn, one tear passing through hilus. Splenectomy.	Recovery.
27	Hildebrandt (Thomen). Arch. Klin. Chir., vol. lxvi.	Boy, 15. Run over.	Collapse. Signs of internal hemorrhage. Abdomen not tense, but tender everywhere. Dulness in flanks.	Laparotomy, two hours after injury. Tear in spleen sutured.	Recovery.
28	Same as No. 27.	Fell on left side of abdomen.	Constantly increasing anemia. No tenderness or rigidity. Dulness on left side of abdomen.	Laparotomy, one hour after injury. Splenectomy.	Recovery.

CASES OF RUPTURE OF SPLEEN.—OPERATED ON, BUT FATAL.

No.	Name of Operator and Journal.	Patient and Injury.	Symptoms.	Extent of Injury and Treatment.	Result.
1	J. Croft. See Trapp. Deut. Z. für Chir., Bd. 44, No. 13.	Male, 25. Run over.	Shock and signs of internal hemorrhage.	Laparotomy 13 hours after injury. Fractures, eighth to eleventh ribs. Rupture of spleen. Splenectomy.	Death same day, due to shock.
2	A. O. MacKelar. (Same.)	Struck on abdomen. Man, 57.	Collapse, pain in splenic region. Signs of internal hemorrhage.	Laparotomy 30 hours after injury. Ruptured spleen. Free hematoma. Peritonitis. Fracture several ribs.	Death on third day. Lacerated kidney revealed at autopsy.
3	Page. Lancet, 1892, i.	Child.	Signs of internal hemorrhage.	Laparotomy 46 hours after injury. Ruptured spleen.	Death after temporary improvement.
4	Lane. (Same.)	Boy, 15. Struck by pole of wagon.	Signs of internal hemorrhage.	Laparotomy (immediately). Spleen extensively ruptured.	Death five hours after operation.
5	Trendelenburg. (Cf. Gottschalk, Inaug. Diss., Bonn, 1893.)	Struck by cow's horn in left side.	Signs of internal hemorrhage.	Laparotomy 29 hours after injury. Transverse rupture at hilum of greatly enlarged spleen (24x12x6 cm.).	Rapid death.
6	Lane. (See No. 4.)	Child, 4. Struck by pole of wagon.	Signs of internal hemorrhage.	Immediate laparotomy. Splenectomy. Extensively torn spleen.	Death five hours after operation.
7	Battle. Brit. Med. Journal, 1893.	Man, 40 years. Fell 15 feet; walked to hospital.	Tenth left rib broken. Signs of int. hemorrhage. Gradually increasing in intensity.	Laparotomy. Splenectomy. Spleen ruptured.	Death on sixth day, of peritonitis.
8	Strange and Ware. Brit. Med. Journal, 1897, I.	Male, 51 years. Had had malaria. Crushing injury.	Severe abdominal pains, especially in region of spleen. Dulness over latter increased. Collapse.	Laparotomy. (Very difficult.) Splenectomy. Rupture of *adherent* spleen on anterior edge.	Death on table.
9	Lanarchia. Münch. Med. Woch., 1897.	Boy, 15 years. Struck a blow with fist over left hypochondrium.	Signs of internal hemorrhage.	Laparotomy. Spleen (enlarged to double its size by malaria) has a horizontal tear. Suture.	Death one and a half hours after operation, of hemorrhage from second, not discovered, tear.
10	A. G. Gerster. Mt. Sinai Hosp. Reports, 1898.	Girl, 4 years. Run over.	Admitted 48 hours after injury, with abdomen distended. Evidences of fluid; fever, vomiting.	Laparotomy. Found peritonitis and free blood. Transverse rupture of spleen completely dividing organ in two halves. Tamponade.	Death ten hours after operation. Found hemorrhage in both pleural cavities at autopsy.
11	Eigenbrodt. (Deut. Med. Woch., No. 40, 1899.)	Male, 35 years. Fell upon girder from great height.	Signs of internal hemorrhage.	Laparotomy five hours after injury. Splenectomy of ruptured spleen.	Death in six hours, of extreme anemia.
12	Bardenhauer. Deut. Med. W., 1897. Vereinsbeil. Pflücker.	Male. Run over on right side of abdomen.	Signs of internal hemorrhage.	Laparotomy. Splenectomy.	Death in collapse.
13	Trendelenburg. Deut. Med. W., 1890, No. 40.	Male, 21 years. Run over by wagon. Heavy drinker.	Transitory coma, followed by severe abdominal pains, collapse, and signs of internal hemorrhage.	Laparotomy 20 hours after injury Rupture of spleen. Splenectomy.	Severe delirium tremens on following day. Died on seventh day of peritonitis. Autopsy showed a rupture of left lobe of liver.

No.	Name of Operator and Journal.	Patient and Injury.	Symptoms.	Extent of Injury and Treatment.	Result.
14	Leydel.	Kicked by horse in splenic region. Male.	Signs of gradually increasing internal hemorrhage.	Laparotomy. Extensive tear of spleen and capsule stripped off.	Died on twelfth day of severe anemia.
15	Demoulin. Bull. Soc. Chir., Paris, 1901. July 2.	Male, 51 years. Horse kick in left hypochondriac region.	Very marked shock, from which gradual recovery. Suddenly, on fifth day, signs of internal hemorrhage, without cause.	Laparotomy fifth day after injury. Lower third of spleen completely separated. Capsule covered stump and checked hemorrhage temporarily. Splenectomy.	Death 57 hours after operation, of septic peritonitis.
16	Veron. Bull. Soc. Chir., Paris, July 2, 1901.	Male. Kicked by horse in left hypochondriac region.	Immediate shock and emesis. Signs of internal hemorrhage increasing. Dulness everywhere, except over stomach. Early rigidity of belly wall.	Laparotomy 22 hours after injury. Large intraperitoneal clot. Rupture along entire border, and one running toward hilum. Splenectomy.	Death tenth day after accident. Due to septic peritonitis.
17	Eisendrath. (Unpublished.)	Struck over left hypochondrium, with monkey-wrench. Male, 16 years.	Abdomen distended, especially in lower left half. Pulse 96, full. Dulness in both flanks; changes on turning. Signs of internal hemorrhage.	Laparotomy ten hours after injury. Large amount of intraperitoneal liquid and clotted blood. Spleen, on external surface, showed deep tear. Splenectomy. Also ligation of bleeding omental vessel.	Death two days after operation, of peritonitis.
18	J. Bell. Brit. Med. J., vol. i, p. 178, 1901.	Male, 27 years. Kicked in abdomen.	Gradually increasing signs of internal hemorrhage, and great pain.	Laparotomy 14 hours after injury. Tear beneath capsule, which had ruptured at hilum. Splenectomy. Blood clots removed.	Death caused by hemorrhage around medulla, and fracture of base.
19	Eichel. Münch. Med. Woch., Oct. 15, 1901.	Run over by ammunition wagon. Male, 20.	Pulse small, 120. Respiration, 30. Dulness in left flank. Blood in urine.	Laparotomy six hours after injury. Longitudinal tear over convexity, and one across hilum. Splenectomy.	Death 18 hours after injury. No peritonitis. Autopsy showed a small tear of kidney with but slight hemorrhage.
20	Cohn. Münch. Med. W., May 1, 1900.	Male, 23. Fell on abdomen, striking edge of chair.	Severe pain in abdomen. Vomiting. Free fluid (evidence of) in peritoneal cavity.	Laparotomy 10 hours after injury. Large amount of free intraperitoneal blood. Tears on gastric surface of spleen.	Death two days later. Autopsy showed marked anemic and edema of lungs.
21	Hildebrandt (Thomen). Arch. für Klin. Chir., Bd., 66.	Male, 45. Struck over abdomen by trunk of tree.	Collapse. Signs of internal hemorrhage. Dulness in left flank.	Laparotomy one and a half hours after injury. Ragged tear in spleen, cauterized and tamponed.	Died two days later of pneumonia.

LAPAROTOMY FOR RUPTURE OF LIVER WITH FATAL RESULTS.

No.	Author and Journal.	Nature of Injury.	Symptoms.	Operation.	Remarks.	Result.
1	Korte. Samml. Klin. Vortrage, No. 40.	Run over.	Emphysema of skin. Fracture of right fifth, sixth and seventh ribs. Tenderness over abdomen. Hematuria.	Laparotomy on third day. T-shaped tear of liver. Drainage.	Found particles of liver with bile between coils of intestine. At autopsy found also rupture of kidney.	Died day of operation.
2	Leith. Edinburgh Med. J., 1895.	Severe contusions of epigastrium.	Signs of internal hemorrhage.	Laparotomy. Almost complete separation of left lobe.	Two branches of portal vein torn.	Died.
3	MacCormac. Samml. Klin. Vortrage, No. 40.	Fell on back while drunk.	Severe pains in epigastrium, collapse, vomiting.	Laparotomy. Removed clots.	Found at autopsy a tear of under surface of right lobe, and also of large branch of portal vein.	Died.
4	Mason. Lancet, 1889.					
5	Page. Terrier et Auvray, Rev. de Chir., 1896.	Run over.	Slight contusion of abdominal wall. Tympanites. Pain. Signs of internal hemorrhage.	Laparotomy on third day after injury. Removed clots.	....	Died.
6	Page. (See above.)	Severe blow over liver.	Pain in abdomen. Signs of internal hemorrhage.	Laparotomy 30 hours after injury.	Could not find wound in liver on account of restlessness of patient.	Died.
7	Pech. Centralbl. Chir., No. 8, 1900.	Kicked by horse.	....	Laparotomy 30 hours after injury. Did not find liver injury.	Autopsy showed deep tear on convexity of liver and on kidney; also peritonitis.	Died.
8	Schlather. Beitrage Klin. Chir., v, 15.	Run over.	Vomiting. Pain over liver. Later tympany, tenderness, dulness. Hematuria.	Laparotomy three and one-half hours after injury. Tear in liver and duodenum. Both sutured.	Blood and contents of duodenum in peritoneal cavity.	Died 20 hours after operation.
9	Trendelenburg. (Wilms). Deut. Med. Woch., No. 35, 1901.	Run over.	Severe collapse. Rigidity of walls. Increasing anemia.	Laparotomy two days after injury. Suture.	Autopsy showed second tear on posterior surface; also rupture of kidney.	Died seventh day.
10	Same.	Run over.	Severe collapse. Pain in left side. Dulness in flanks, especially left.	Laparotomy 20 hours after splenectomy for ruptured spleen.	Autopsy showed tear of left lobes.	Died seventh day.
11	Same.	Crushing injury.	Signs of internal hemorrhage. Fourth and ninth ribs broken. Dulness in flanks.	Immediate laparotomy. Felt whole right lobe crushing.	Total crushing of posterior portion of right lobe of liver. Fractured ribs.	Died same day.
12	Same.	Kick.	Vomiting. Severe pain in epigastrium. Rigidity of abdomen. Dulness in flanks.	Laparotomy. Glisson's capsule extensively torn off and deep tear at edge. Tamponed.	Hematoma in liver surrounded by necrotic zone. Pleuropneumonia.	Died after seven days.
13	Wilkerhauser. Central. Chir., 1897.	Kicked by horse.	Signs of internal hemorrhage.	Laparotomy. Three-inch tear in left lobe. Tamponed.	Autopsy showed pneumonia. Overlooked another tear in liver and vein.	Died five days later.
14	Fraenkel. Beit. Klin. Chir., v, 30.	Kicked by horse.	Pain in abdomen. Severe collapse. Dulness in flanks. Rigidity of abdominal walls. Tenderness.	Laparotomy eight and one-half hours after injury. Suture and tamponade.	Autopsy showed no more bleeding. Sutures had held.	Died 20 hours after operation.
15	Leeming. (Unpublished.)	Caught between wagon wheel and wall.	Rigidity of abdominal wall. Pain in epigastrium.	Laparotomy three days after injury. Large tear in right lobe near gall-bladder.	....	Died two days after operation.

LAPAROTOMIES FOR RUPTURE OF LIVER, WITH RECOVERY.

No.	Author and Journal.	Injury.	Symptoms.	Treatment.	Remarks.
1	Delatour. Med. News, 1900	Thrown from tally-ho coach.	Shock and internal hemorrhage. Dulness in flanks.	Laparotomy 24 hours after injury. Tamponed.	Complicated by fractures of right ninth and tenth ribs.
2	Same.	Caught between two cars.	Shock and severe increasing internal hemorrhage.	Laparotomy 12 hours after injury. Sutured tear on under surface of right lobe.	Operation at first refused, but consent given when condition grew worse.
3	Dalton and Auvray. Rev. de Chir., 1896.	Fall from height.	Localized pain, tympanites, dulness. Hematuria.	Laparotomy 19 hours after injury. Tamponade.	
4	Same.	Kicked in abdomen.	Pain in epigastrium. Dulness. Pulse, 104.	Immediate laparotomy. Tamponed.	Removed tampon after 24 hours; had to renew same.
5	Carwardine. Lancet, 1900.	....	....	Laparotomy (immediate). Tamponed.	Patient was pulseless when began operation.
6	Faure. Bull. de Soc. de Chir., 1896.	Kicked by horse.	Severe pain in right hypochondrium.	Laparotomy three hours after injury. Tamponed. Left forceps on vessel.	Gall-*bladder* completely loosened. Rupture of large vessel.
7	Hahn. Centralbl. für Chir., No. 28, 1899.	Ran against tree while riding bicycle.	Unconscious. Signs of internal hemorrhage. Pulseless. Dulness.	Laparotomy five hours after injury. Suture of tear and tamponade.	
8	Hartmann. Bull et Mem. Soc. Chir., p. 143, 1899.	Hurt during fall of house.	Contracture of abdominal walls.	Laparotomy four hours after injury. Tamponade.	Tear was near gall-bladder. Bile flowed from wound for two weeks.
9	Kronlein. Corrsp. Blatt Schweizer Aerzte, No. 20, 1898.	Fell seven feet.	At first slight symptoms.	Laparotomy. Deep tear sutured, which checked hemorrhage.	
10	Langenbuch. Centralbl. für Chir., No. 28, 1899.	Fell three stories.	Signs of internal hemorrhage.	Laparotomy. Tamponed between diaphragm and upper surface of right lobe.	
11	Martin. Lancet, 1897.	Crushing injury.	Severe pain in right side of abdomen. Next day condition grew worse, with signs of peritonitis.	Laparotomy 32 hours after injury. Hot water checked hemorrhage. Drainage to wound.	Large amount of free blood and beginning peritonitis.
12	Schuchardt. Berl. Klin. W., No. 32, 1898.	Crushing injury.	Pain in epigastrium, which increased. Vomiting. Decreasing quality of pulse.	Laparotomy six hours after injury. Tamponade.	Tear on interior aspect right lobe.
13	Trojonow. Centralbl. für Chir., No. 7.	Fell from steps.	At first pain, which increased. Dulness in right iliac region. Signs of peritonitis on third day.	Laparotomy on third day. Tamponade.	Six days after operation had a subphrenic abscess, which was drained.
14	Zeidler. Deut. Med. W., No. 37, 1894.	Run over.	Contracted muscles of abdomen. Pain in shoulder and in abdomen.	Laparotomy four hours after injury. Suture of large tear and tamponade of tear on interior aspect or right lobe.	Large amount of blood in abdominal cavity.
15	Fraenkel. Beitrage zur Klin. Chir., vol. xxx.	Fell from height.	Pain in abdomen. Eructations. Marked collapse. Dulness in flanks. Contracted muscles. Abdomen tender.	Laparotomy 11 hours after injury. Suture of large tear and tamponade of smaller ones.	Large tear in right lobe. Two to three pints of blood in abdomen.
16	Trendelenburg. (Wilms.) Deut. Med. W., No. 35, 1901.	Run over.	Severe pains in epigastrium. Dulness and tenderness over left lobe.	Immediate laparotomy. Tamponade.	
17	Trendelenburg. (See above.)	Crushing injury.	Unconscious for short time. Signs of internal hemorrhage. Pain in epigastrium and right shoulder. Dulness in flanks.	Laparotomy four hours after operation, but did nothing. Second laparotomy on fifth day for recurrence of hemorrhage.	Had pneumonia during period of convalescence.
18	Guinard. Bull. Soc. Chir. de Paris, May 26, 1897.	Kicked by horse.	....	Laparotomy. No method of hemostasis given.	Large amount of free blood in peritoneal cavity.
19	Trendelenburg. (Wilms.) Deut Med. W., No. 35, 1901.	Ran against pole of wagon. Was on bicycle.	Severe pain in abdomen. Signs of internal hemorrhage. Dulness in flanks. Contracted muscles.	Laparotomy (immediate). Tamponade of deep tear.	Large tear in right lobe. Bile secreted through gauze.
20	Hildebrandt. (Thomen.) Arch. Klin. Chir., vol. lxvi.	Caught between two wagons.	Collapse, severe pains in abdomen. No rigidity.	Laparotomy two hours after injury. Wound on inferior aspect right lobe suture.	
21	Mercade Revue de Chirurgie.	Run over by wagon.	Signs of internal hemorrhage. Pain over entire abdomen. Three abrasions over left costal arch. Dulness in flanks. Increasing anemia.	Laparotomy one hour after injury. Extensive rupture on right lobe. Suture and tampon.	
22	S. W. Little. N. Y. Med. Rec., Dec. 22, 1900.	Struck in abdomen with piece of wood.	Collapse, signs of internal hemorrhage. Severe pain in epigastrium.	Laparotomy four hours after injury. Tamponade.	Deep tear on inferior aspect right lobe.

After looking at this rather dark picture, let us see if modern surgery has improved these statistics any, through early or even late operative interference. In 1890 the percentage of mortality after splenectomy for rupture of the spleen was 100 per cent., three cases; from that date to 1900 there were 34 cases operated on, with a mortality of 41 per cent. I have collected all of the cases operated on to the present time, including my own. There had been 50 cases, of which 28, or 56 per cent., recovered, and 21, or 44 per cent., died. Of those who recovered 27 of the 28 have been operated on since 1895. Seven of the 28 were operated on in the first six hours after injury, 5 within twelve, 5 within twenty-four, 1 within thirty-six hours, and one each was operated on on the fifth, eighth and eleventh day respectively. Of those who died after laparotomy 7 were performed within six hours and of these three died of acute anemia and one of pneumonia. Two were operated on within twelve hours. One died of peritonitis and anemia, the other of anemia alone. Of 4 operated on in the first twenty-four hours, two died of complicating injuries, one of shock and one peritonitis. Of 2 which were operated on within thirtysix hours one already had peritonitis and the other died of anemia. Of 2 operated on in forty-eight hours one had extensive peritonitis at the time of operation and the other had suffered greatly from hemorrhage. One was not operated on until the fifth day and died of septic peritonitis.

The first laparotomy for rupture of the liver was performed by Willette in 1888. Since that time up to the present, with the case above quoted, there have been 37 laparotomies for rupture of the liver. Of these 22, or 59.5 per cent., recovered and 15, or 41.5 per cent., died. Of those which recovered 14 were operated on within six hours after the injury, 3 within twelve, 2 from twelve to twenty-four hours after the injury, and one on the third day. Of the fatal cases, in one the operation was not performed until the third day; one died of hemorrhage from the portal vein shortly after operation; in one no attempt was made to treat the tear on account of the collapsed condition; in one it was not discovered until twenty hours after a splenectomy was performed. In one a second tear was overlooked and in two it was not found at the time of operation. One died of pneumonia and the autopsy showed that a tear in the liver and in the portal vein was overlooked. Only one case can be truly regarded as an unsuccessful one, in which the operation occurred eight hours after injury, and the patient had no further hemorrhage, as shown by autopsy. Of all of these ruptures of the liver all but 3 of the 19 which recovered have been operated on since 1895, and 8 of the 15 who died were operated on since that date. In a few reports the time after injury of the operation and the cause of death is not given both in the case of the liver and spleen.

In the above, if those cases which died of acute anemia, complicating injuries, overlooking a second tear, shock (primary) and being operated on too late (when septic peritonitis had already begun) are excluded, the mortality rate would be greatly lessened.

In 1896 Petry collected 42 cases of laparotomy for rupture of the stomach and intestine. Of these 14, or 33.6 per cent., recovered, and 28, or 66.7 per cent., died. One died of intercurrent disease, 5 of incomplete operations. Hence, the mortality was really only 52.3 per cent. (22 cases). Of 18 operations in the first twenty-four hours, 8 recovered, 44.5 per cent. Of 24 operations later than twenty-four hours, 6 recovered, or 25 per cent. Since Petry's article I have been able to collect 40 cases, of which 19, or 47.5 per cent., recovered, and 21, or 52.5 per cent., died. If we exclude one case in which death occurred as the result of overlooking two perforations and a second death (Bullitt) in which operation simply consisted in opening a fecal abscess one month after a rupture of the intestine, there will be out of 38 cases, 19 recoveries, or 50 per cent., and 19 deaths, or 50 per cent. This certainly is a very gratifying advance and speaks in a convincing way of the value of early diagnosis and laparotomy in recent years. This is even more striking when we find that of the 19 recoveries, 16 were operated on in the first twelve hours and two in the second twelve hours following the injury.

In regard to the change which operations have made in the mortality of rupture of the kidney one need only to compare the statistics of Kuster, mortality 30 per cent. in 222 cases, with those of Keen or Wallis. The former (Keen) collected 22 nephrectomies for subcutaneous ruptures of the kidney. Five per cent. of these were primary, with one death (20 per cent. mortality). and 13 secondary nephrectomies, with five deaths, or 38.5 per cent. Wallis cites 14 nephrectomies for ruptured kidney, of which 9 recovered (43 per cent. mortality). Kuster collected 47 cases of nephrectomy for the same condition to 1896, of which 39, or 83 per cent., recovered, and 8, or 17 per cent., died. We thus see that if nephrectomy or nephrotomy (as in the above two cases of Dr. Halstead's) were made the rule soon after an injury the mortality would be reduced far below 20 per cent.

Up to 1894 there had never been a case of intraperitoneal rupture of the kidney operated on successfully. Since that time six cases have been reported, all of which recovered (De Quervain, Kehr, A. E. Halstead, Mixter, Tuffier and Souligoux).

Of injuries of the gall-bladder, only four laparotomies have been performed (Hermes, Garrett, Porter and De Forest Willard). Three of these recovered and one died (Porter). The latter was not operated on until thirty days after injury.

Of injuries to the urinary bladder, Alexander collected since the date of the first operation for intraperitoneal rupture (Willitt in 1876) 45 cases. Of these 23, or 51 per cent., died, and 22, or 49 per cent., recovered. If the first two cases are excluded (Willitt and Heath) on account of faulty method of suture (through all coats) there would be only 48 per cent. mortality in 43 cases. In extraperitoneal rupture the latest statistics are those of Mitchell in 1898, 90 cases with 83.3 per cent. mortality. During the preceding 15 years (1883 to 1898) it has been reduced to 70 per cent. My case quoted above will show how early recognition of the condition will reduce the mortality.

To recapitulate, the relation between spontaneous cures and operative interference is about as follows, at present:

	SPONTANEOUS RECOVERIES.	OPERATIVE RECOVERIES.	
	Per cent.	Per cent.	
Spleen	15.8	56.	(50 cases)
Liver	21 8	59.5	(37 cases.)
Intestines	7.	48	(42 cases, prior to 1896.)
		50.	(38 cases since 1896.)
Kidney (extraperitoneal)	70.	80.	
Kidney (intraperitoneal)	0	100.	(6 cases.)
Bladder (intraperitoneal)	2.	52.	(43 cases.)
Bladder (extraperitoneal)	11.	30.	(last 15 years) Mitchell.

TREATMENT.

When we compare these two columns there can be but one conclusion, and that is the basis of the plea which I would most earnestly make, viz., to give up our policy of expectancy and delay and to recognize our duty as soon as even a probable diagnosis of rupture of one of the abdominal viscera without external signs has been made. Rather a few laparotomies in vain than allow the former mortality rate to continue.

It is our duty when called to such a case to examine it most painstakingly for some of the above general and local symptoms and inquire carefully into the manner of injury. Seen in the early hours, before the anemia has become too acute or the danger of sepsis too great, laparotomy or nephrotomy should be advised. The incision should be made in the median line above the umbilicus if we suspect a rupture of the liver, spleen or stomach, and below it if we fear one of the small intestine, colon or bladder. It can be enlarged, if necessary, to the right or left. For injuries of the kidney an oblique lumbar incision, which can be extended into the peritoneum if necessary, is best. If a large quantity of blood escapes it should be sponged out and search made for rupture of the liver, then for one of the spleen, kidney or abdominal vessels. A suture with non-cutting needle and silk is best for the liver if the tear is small. If larger it is best to tampon. For small lacerations of the spleen suture and tampon will at times suffice, but for the majority of cases only splenectomy will suffice. because as in my own case, the tissue will be so friable that sutures will tear out and tampons become displaced.

In ruptures of the gastrointestinal tract the tear, if longitudinal, should be closed transversely by Lembert suture and vice versa to avoid a stricture. At times resection may be necessary. It should be remembered that the ileum is most often frequently the seat of injury. In extraperitoneal rupture of the kidney the tampon will suffice if the organ is not too extensively lacerated. If the latter is the case primary nephrectomy will give the best results. In intraperitoneal rupture of the kidney the peritoneum must be stripped up until the tear is found and the kidney then treated as for the extraperitoneal variety of rupture, removing all clots from the peritoneal cavity first.

In rupture of the bladder, the prevesical (extraperitoneal) space should be first exposed, the bladder opened and explored with the finger; if a tear has been found it should be sutured with catgut, if outside the peritoneum. and then the pelvic connective tissue drained. If intraperitoneal it is best closed with a Lembert silk suture. In general it is useless to operate on cases when peritonitis has begun. Apparent shock should not deter from early operation. While we are waiting for it to pass off the patient may die of acute anemia. Shock should be treated in the ordinary manner. The anemia will respond best to salt solution. Do not give morphin if a ruptured intestine is suspected.

In conclusion let me again urge the profession in general and surgeons especially to examine these cases carefully and operate on them early if we wish to reduce the present relatively high mortality.

Growth of the Hair.—Dr. Jolly's work on the chemical composition of horse hair shows that functional activity attains its maximum in the black hairs, which contain infinitely more phosphate of iron than red or blonde hairs. Falling of the hair is often observed in nursing animals; similarly, nursing women lose a great deal of hair. This is apparently caused by the fact that the phosphates are not fixed in the hairs, but are carried away by the milk secretion. Loss of hair in arthritic persons is quite different. An arthritic patient is one whose cellular nutritive functions are modified by his disease, and in whom the hairs effect the permanent fixation of the phosphates in themselves in a very imperfect manner.—Abstract from *La Presse Med.*

THE RELATIVE MERITS OF THE VARIOUS METHODS OF INTESTINAL ANASTOMOSIS.*

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At the outset I will state that my paper will be confined entirely to mechanical and experimental work. My work consists of six hundred and fifty experimental operations on the dead intestine and twenty on living pigs. Fifty operations were done in 1895 and 1896; two hundred in 1900; two hundred during 1901, and two hundred during the present year. All types of methods have been tested. No operation has been brought into the contest until it had been done more than twenty-five times. For speed, an average of time in ten operations of a kind has been taken. For accuracy the dead gut has been sewed, distended with air and sunk in water. Final results have been tested on living pigs killed two to three months after operation. Pigs have been used instead of dogs because the intestines are more like human.

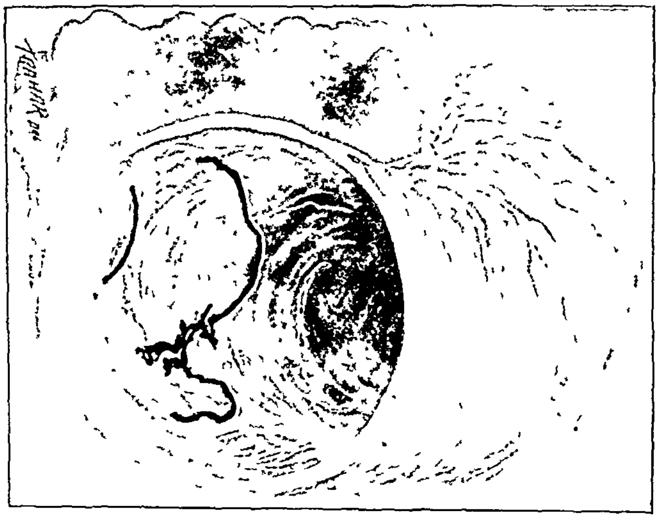

Fig 1.—Connell continuous suture hanging in a pig's intestine, two and one half months after an operation.

MERITS FROM A MECHANICAL STANDPOINT.

In considering the various methods of intestinal anastomosis our decision must be based upon three classes of work: mechanical, experimental and clinical.

Under the head of mechanical work we have three points for consideration: speed. accuracy and adaptability. Under the head of speed we found merit in the following order: Murphy button, Frank's coupler, Connell suture, crushable button and various forceps operation, Halsted's operation, Maunsell's operation. Under the head of accuracy and immediate results I have found them in the following order: Crushable button with two rows of continuous suture, Connell suture, crushable button with one row of sutures, Halsted's method and various intestinal forceps.

Of the three mechanical points we are to consider adaptability is, in my opinion, far more important than the other two. For instance, a doctor is summoned to see a case that "has been shot." He seizes a few instruments hurriedly and goes to the scene. He finds that his patient has been shot in the abdomen. He has no mechanical appliance at hand. He makes an incision at once and finds it necessary to excise a portion of the gut. As he knows no method but the Murphy button, his patient dies. Again, he is called to see a case of colic and finds a strangulated hernia with gangrene. After his other experience he has taken up some form of forceps, Halsted's rubber cylinder, or some other mechanical device. and has learned these methods of suturing, but he never thought of taking these devices to the country to see a case of colic, and he does not know any method of accurately suturing the bowel without some kind of a device for retaining the ends in position. This patient is in a dying condition before he gets his device and he again finds that he has learned the wrong method. He finally decides with Fenger, that "if he is to do intestinal surgery he must learn to suture intestines."

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs H. O. Walker, A. J. Ochsner and DeForest Willard.

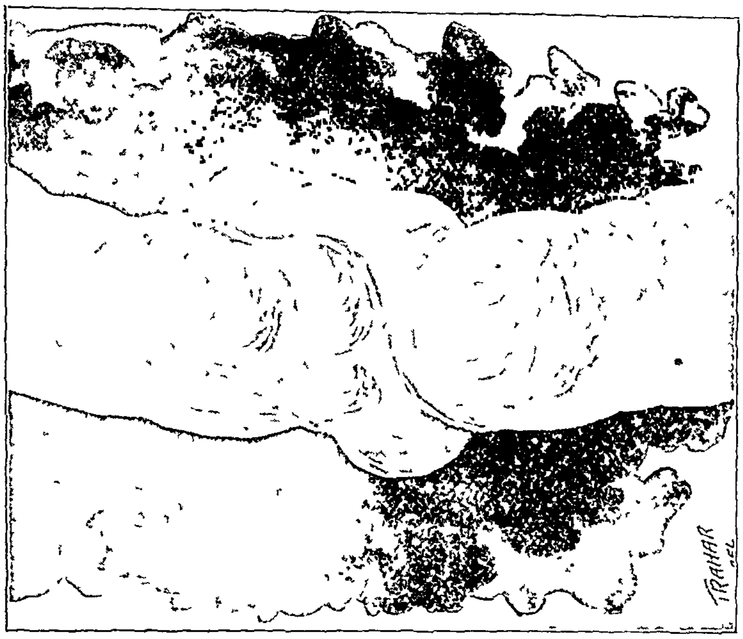

Fig. 2.—Pig's intestine two and one half months after a lateral anastomosis, showing how the gut straightens out forming a perfectly straight canal.

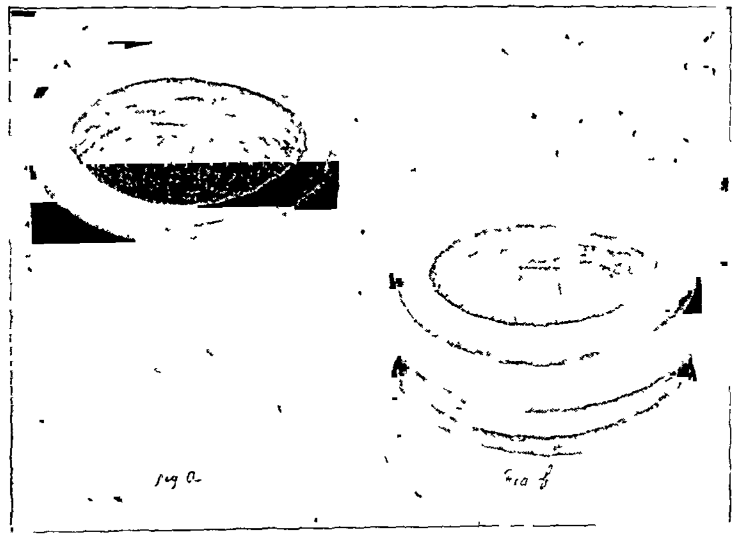

Fig. 3.—(*a*) Potato tube to be used with transfixion pins. (*b*) Crushable button (referred to in text).

Under the head of adaptability we find that all mechanical devices for temporarily or permanently retaining the ends of the intestines in position are adapted to but a single kind of anastomosis and only under circumstances when the device happens to be at hand. Crushable and digestible appliances are adapted to all cases of intestinal anastomosis where a needle and thread and a potato, turnip or piece of bread can be found. The Connell suture is adapted to all cases of intestinal anastomosis, under all circumstances where a needle and thread can be had.

MERITS AS SHOWN BY EXPERIMENT.

Under the head of experimental work we consider the following points: first, fatality due to operation; second, amount of adhesion; third, firmness of union; fourth, caliber.

My own experimental work consists of twenty operations on living hogs. Of these one died from anesthesia; two were operated on by O'Hara's forceps; each died three days later from total obstruction. A postmortem showed in each case that the end of the intestine, which had been crushed in the bite of the forceps and had subsequently been turned inside the intestine, had absolutely and firmly united and produced complete obstruction. Of the two operated on by the Murphy button, one lived in a bloated condition, without gaining in weight, for three months and finally died of cholera without shedding the button. No opportunity to examine the specimen. The other died eight days after the operation, postmortem showed non-union, with both ends of the intestine open. One lateral anastomosis was done with the crushable button with a perfect result: one gastrointestinal anastomosis was made with the Connell suture with perfect result; one Halsted circular suture was done with perfect result; of six operations done by Connell's method, three were continuous and three interrupted sutures—all successful; six operations were done by the aid of the crushable button, three interrupted and three continuous—all successful. In this connection I will quote the experiments of Edmund and Stabb, who did twenty-one operations on dogs—seven by Halsted's method, all recovered; seven by the Murphy button, five recovered, two died of non-union; seven by the Laplace forceps, four recovered, three died of non-union.

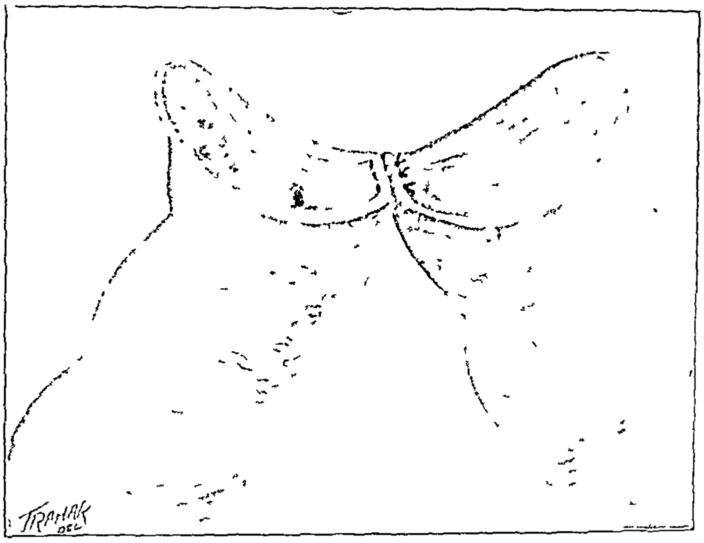

Fig. 4.—Three Connell sutures placed at the mesenteric attachment ready for insertion of tube.

Of the intestines examined after the hogs were killed, two had omental adhesions covering what seemed to have been a leak in the bowel, one following operation done by potato button and interrupted Lembert stitch and the other by the use of the interrupted Connell stitch.

As to the firmness of union, I could see no difference except that the Lembert stitch had produced a thicker and heavier scar, due, no doubt, to the irritation of the stitch on the outside. Microscopic union has been investigated by Barbat. His work seems to prove that for all practical purposes no essential difference exists. I could notice no appreciable difference between the lumen of the gut following operations by various methods. Plaster casts of the lumen proves that there is no appreciable difference between the amount of constriction produced at the time of operation and that existing after union has taken place. Plaster casts indicate that the chief element influencing the diaphragm or caliber is the amount of tissue included in the bite of each thread. Hence the necessity of including as little tissue as possible in each loop where a quilt suture is being used.

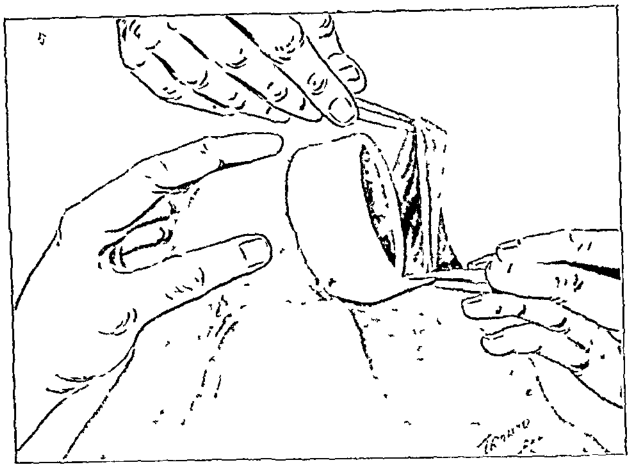

Fig 5.—Inserting digestible tube

Following the Connell operations in which a continuous suture had been used, in three cases the suture was hanging partially free and partially attached across the intestinal canal, two months after the operation. In every instance it required a good deal of force to tear it out of its attachment. I reproduce a drawing showing one of these threads. The only peculiarity noticed in the Halsted case seemed to be a crooked or twisted condition of the line of union, due, I believe, to the intestine being so prone to twist and become askew during the suturing with mechanical appliances, more especially with the Halsted cylinder.

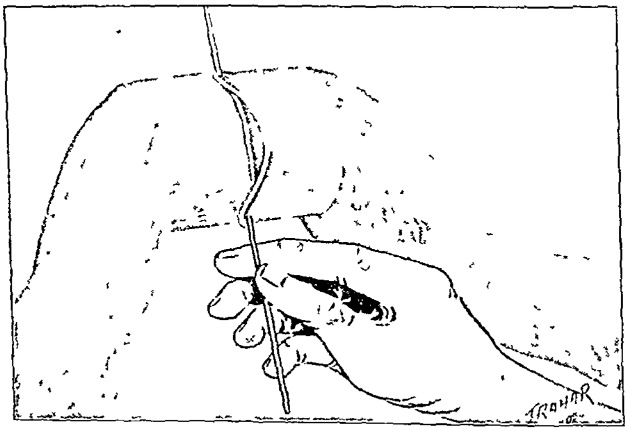

Fig 6.—Inserting first transfixion pin, including the edges of both intestines and passing through the potato tube.

THE AUTHOR'S CONCLUSIONS AS TO THE RELATIVE MERITS.

In drawing my conclusions, I have reached my decision by elimination. In the first place, I would eliminate all intestinal forceps except the O'Hara forceps, from a merely mechanical standpoint without ever bringing it to the experimental stage, because they are in no way mechanically superior, are in many ways inferior to other methods and possess the great disadvantage of many times not being present when needed. Second, I would eliminate the O'Hara forceps as positively dangerous, needing no further proof than the specimens removed from the animals of my own experiments, and because it has no mechanical advantage and may not be present when needed. Third, I would eliminate appliances like Halsted's cylinder, Lee's holder, etc., notwithstanding the fact that the results following are excellent, for the reason that they are awkward, require removal and are many times not present when needed. Fourth, I would eliminate Frank's coupler because it is a foreign body left in, because of the uncertainty of the pressure that would be made by the rubber and because it is many times not present when needed. In this connection I will state that I recently received one which had been bottled for a considerable length of time and the rubber tube had become old and cracked and did not have strength enough to hold the weight of six inches of empty intestine; in fact, the pressure would not have been enough to prevent leakage much less produce constriction and sloughing as it was intended to do. Fifth, I would eliminate the Murphy button except in cases of extreme shock which require speed, because it is a foreign body which does not always come away; second, it depends on sloughing for its release and must necessarily be much more fatal than a well-applied suture. Sixth, I would eliminate the crushable button because it requires a longer time than the Connell suture and only permits of an external suture and is not always as convenient as a simple thread. Seventh, I would eliminate the continuous Connell suture because it is more difficult to place at the end than an interrupted suture and remains hanging partially loose across the intestine for months after the operation, thus making at least a remote danger of obstruction. I would eliminate Maunsell's operation because it is complicated, requires two openings, is slower, and is done by an overstitch instead of a right angle stitch.

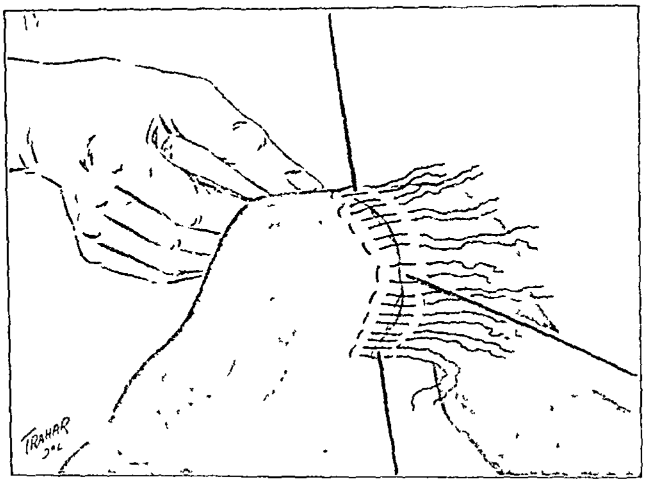

Fig. 7.—Quilt sutures inserted but not tied.

I would class the interrupted Connell suture as the ideal suture, the acme of surgical perfection, and as far as we may ever hope to go in intestinal anastomosis. The excelling virtues of the Connell suture are: it is quick, accurate, surgical, direct and adaptable under all circumstances, and by force of worth will become the standard. It has this objection, however, which is a serious one, that it is hard to understand by the man who is not a natural mechanic or who does not have an opportunity of seeing an actual demonstration, or by the "occasional operator," who will naturally forget the method between operations.

A METHOD WITH SIMPLER TECHNIC.

Competent surgeons have told me that they have learned the Connell suture two or three times by demonstration and have yet been unable to perform the operation after some months have elapsed. It is practically impossible to learn the method from cuts presented in the literature. It is, therefore, necessary to have another method and a simpler method for the so-called occasional operator who makes no specialty of surgery. I therefore present to you drawings of a method which I have recently devised, I may say, since my work was completed, the simplicity of which I have proven by having three physicians as well as two junior medical students perform the operation without any instructions except the drawings here represented. They all did the operation perfectly. I think it will require no argument to convince that the method is simple, easy of application, and places the operation of intestinal suturing in the reach of any one who can pass a needle.

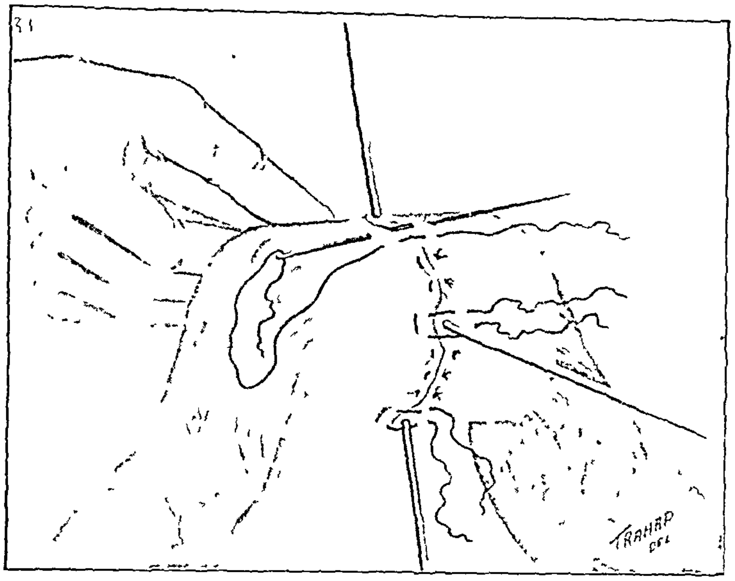

Fig. 8.—Quilt sutures inserted and tied except those surrounding the pins.

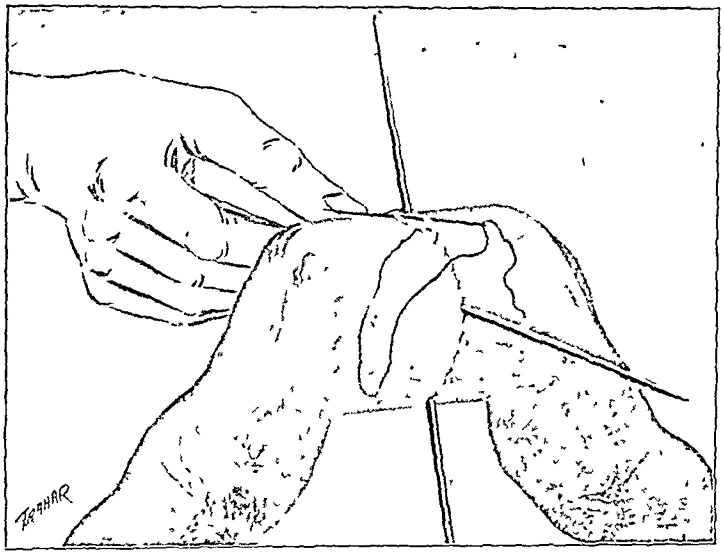

Fig. 9.—Placing the continuous running stitch.

TECHNIC OF THE AUTHOR'S METHOD.

All that is required in making this anastomosis is some digestible substance like a potato, turnip, carrot, bread, etc., with two pins which may be simply toothpicks, small pieces of wood, a hat pin, a knitting needle, darning needles or two probes ordinarily carried in a pocket case and a needle and thread. The following are the steps of the operation:

Place two or three Connell sutures at the mesenteric border (Fig. 4). Insert a thin digestible tube (probably the best may be cut from a potato). One end of the intestine is held on the tube with the left hand while with the right hand and the hand of an assistant the other end of the intestine is drawn over the tube (Fig. 5) and held in place, while with the right hand a pin is inserted through the intestine including the edges of both ends and passing through the potato (Fig. 6). Another pin is then inserted likewise at right angles to the first holding the intestine in four places (Figs. 7 and 8).

Any method may then be chosen for suturing. The quickest method and probably as good as any is a continuous suture (Fig. 9). This method is the quickest of all intestinal sutures, as I have found since my work was done, and can be placed almost as quickly as the Murphy button. The suture may be done by simple interrupted Lembert stitches or by the Halsted quilt stitches (Figs. 7 and 8).

After the suturing has been completed and the pins removed, the tube is slipped away from the site of the operation and crushed to prevent any possibility of obstruction.

While I believe the Connell method is mechanically almost ideal for the reasons expressed previously, I am also of the opinion that the operation here described has some merit and I hope may prove worthy of a place in surgery. It requires no complicated apparatus. Any one can learn it. Any one can do it. No one can forget it. And above all, it is effectual.

DISCUSSION

ON PAPERS OF DRS. EISENDRATH AND COFFEY.

Dr. W. H. Carmalt, New Haven—One of the gentlemen at the last meeting spoke of the fact that gunshot wounds were always double, but this is not true. We do find gunshot going through the edge of the bowel in such a way as to make but one wound and I do not think we are justified in counting on finding two; you must search the bowel all the way through and it is unsafe to leave any portion of the intestine unsearched in our work. The danger of hemorrhage from wounds of the mesenteric vessels is very great and there can be no question in my mind that we must search every wound even to the extent of eviscerating the abdomen. As to the importance of immediate operation the sooner we get at the patient the better and the ideas that have been suggested—which, I think, are entirely exploded—that this subject should be taught to the general practitioner rather than to the surgeon and that we can wait for symptoms are not true. We must get there before symptoms occur and the sooner we can get at our patient's intestine the better—even running the risk of a certain amount of septic work. We must suppose that we can get asepsis. I have operated in the country where all you could get was hot water, but you can boil your towels sufficiently. I think so far as possible we must run a certain degree of risk. There is more risk from delay than from sepsis and it does not add to the danger to operate. Dr. Eisendrath's paper interested me very much. He simply emphasizes the same principle that while we want to be as careful as we can in our diagnosis it is impossible to make one in some cases and exploratory operation is the thing to do.

The dangers of the patient from the operation is very much less than the danger of delay. Secondly, shock is a great danger, and I can not but emphasize this point. We must not wait for symptoms but get at the intestine as soon as possible. I began my work as a physician under the pupilage of the late Dr. Clark, who, you will remember, was a great exponent of putting the bowels in a sling. In every form of peritonitis he simply gave opium. Aseptic surgery has shown us that this is false and we can do better by following Ochsner's plan in appendicitis, where we have the same subject to deal with. Do not let anything get into the alimentary canal. I have tried this plan for years with all abdominal operations, simply keeping the bowel empty and not even giving ice water. Injections into the rectum will serve every purpose. As to carrying anything through the other way, we simply make mischief. The Section is to be congratulated on Dr. Coffey's extensive work on this question and I can only say that his conclusions have agreed very much with my own, only his method is somewhat newer. The using of the potato is not entirely new, but it is an excellent procedure. Although he says that Murphy's button is a very acceptable and sure method in an emergency, I prefer every time to use the suture rather than leave a foreign body in the intestine. Murphy's button does sometimes stay in in cases of gastro-intestinal anastomosis and causes trouble. For an emergency, however, it does fairly well. It is not worth while for me to speak of the value it has been to intestinal surgery, but I must say I would prefer, if my intestine were to be sewed up, that it be done by continuous suture rather than a Matas suture. The continuous suture is a tighter suture than any interrupted suture we can make. When properly applied it is certainly the ideal, in my mind, although, of course, the diagram that has been given and the experiments that have been made have so much greater weight than the limited experience of the ordinary practitioner that that method must be accepted probably in place of mine.

Dr. F. Gregory Connell, Leadville, Colo.—Dr. Eisendrath's paper has certainly brought to our attention a most important and at the same time a most neglected branch of abdominal surgery. We can all agree with him when he says: "Expectant treatment is more dangerous than laparotomy." With our present light, exploratory laparotomy is decidedly the best method of procedure, but it is far from satisfactory and efforts should be made to arrive at some safer method of diagnosis. Even in normal individuals exploratory laparotomy is not to be lightly considered, much less so in patients suffering from the severe shock of an abdominal contusion. The degree of shock, or other symptoms, are notoriously unreliable and indicate in no way the extent of the damage done to the viscera. Cases exhibiting the most severe signs and symptoms are frequently opened and no lesion found, while on the other hand, cases that have received but the slightest injury, and suffered hardly any inconvenience from it, often die of perforative peritonitis. If we are to submit all suspected cases to laparotomy, many persons will be unnecessarily exposed to all the dangers of a major operation, which, to be sure, are smaller than those of awaiting symptoms, but still of such danger that we should not rest with what has been accomplished but strive to arrive at a safer method. In a method of treatment we may expect and do not object to a mortality rate, but a mortality rate of at least 2 per cent., according to Dr. Keen, in a method of diagnosis is something which calls loudly for improvement. A paper with such an object in view, I had the honor of reading before this Section yesterday.

As to Dr. Coffey's paper, the author is to be congratulated on the character of the work presented; it is only by such painstaking and thorough investigations that any of the moot questions of intestinal surgery can be settled, or even be brought near to a settlement. As he has mentioned a method of suture which I described before this Section last year, it will not be out of place to mention additional cases. At that time nineteen cases on the human being were reported. At this time about thirty-five additional cases have been communicated to me, and no objection to the method is presented by any of these operators who have employed it. As to the continuous or interrupted suture, either may be used in this method. There has been, is, and apparently always will be, a difference of opinion as to their comparative advantages and disadvantages. The continuous will occupy a longer time in becoming separated from the bowel and passing into the lumen than will the interrupted. By using a through-and-through stitch this eliminating process will occupy considerably less time than with the Lembert stitch. As to the difficulty of understanding the method, all intestinal sutures demand some conscientious study. This is essential to a satisfactory outcome in all methods and none more so than the Czerny-Lembert. The question has been asked: "What is the advantage of placing the last knot within the lumen; why not employ a Lembert for the last stitch?" It is just such a weak spot that we are trying to obviate. If 12 Lembert sutures are bad and 10 through-and-through and 2 Lembert sutures are better, then 12 through-and-through sutures are best. The chief advantages to be gained by penetrating all coats of the bowel wall and knotting in the lumen may be summarized as follows: 1. Increased security. 2. Less danger of leakage. 3. Smaller diaphragm. 4. Fewer adhesions. 5. Less danger of necrosis. 6. Absolutely no foreign body. 7. Decrease in time.

Dr. H. M. Sherman, San Francisco—I, too, have experienced considerable difficulty in carrying in my mind the technic of the Connell suture. I would suggest the method of Tait, which is to use coat sleeves for an occasional rehearsal. With a needle and thread you can easily suture two sleeves according to this method.

Dr. J. S. Horsley, El Paso, Tex.—Some years ago while working experimentally on dogs a new method of intestinal anastomosis occurred to me and a preliminary note of it was published at that time. I have never had occasion to do the operation on a patient, but the method has been worked out very satisfactorily on dogs and cadavers. It is as follows: The mesentery is incised for several inches at right angles to the intestine, or a V-shaped section removed to facilitate the subsequent manipulation. The ends of the bowel are then placed side by side, opening in the same direction and being in contact along their free surfaces, opposite the attached mesentery. A pair of artery forceps inserted in the ends and clamped holds them in this position. The intestinal ends, after being so fixed, look like a double-barreled shotgun. A finger of the left hand is inserted into one end of the intestine and the thumb into the other, and over them as a bobbin a Cushing suture of fine silk in an ordinary cambric needle is commenced. The first stitch approximates the portion of the two limbs of the intestine near the mesenteric attachment. The suture is then carried obliquely for about two inches when dealing with the small intestine, to the border opposite the mesenteric attachment, and continued over the other side, where it stops at a place corresponding to its point of commencement and is tied. The bowel is now partly everted, exposing a U-shaped septum, grasped by the artery forceps first applied. This septum is cut away with curved scissors, leaving a margin of about one-third of an inch. An overhand suture of silk in a curved needle is then commenced at one edge of the "shelf" left by cutting away the septum, and is carried through all the intestinal coats. When the suture reaches the end of this shelf, it is continued by slightly invaginating the unsutured portion of the resected ends, which consists of about one-fourth of the entire circumference. It terminates at its point of commencement. The first line of sutures is now finished by continuing it about one-fourth of an inch from the overhand suture. The incision in the mesentery is closed.

The advantages claimed for this operation are:

1. It is a suture method, the instruments required being of the simplest.
2. The result looks as if the ends of the bowel were cut obliquely at the expense of their free borders and then united. This gives a diameter at the sutured portion greater than the normal diameter of the intestine and so obviates stricture.
3. It can be very rapidly applied.
4. Applying the sutures during most of the operation over the fingers as a bobbin increases the safety of the suturing.
5. The internal row prevents all hemorrhage.

Dr. C. E. Thomson, Scranton—I have had the same experience in learning the Connell suture. I paid what I thought was ordinary attention to Dr. Connell at last year's meeting, but I failed to learn the stitch. When I saw his article I practiced the stitch for a long time and since I learned it I have not allowed myself to forget it. I have done it experimentally 80 times on a large number of dead hogs and on a number of dogs which unfortunately escaped. I have done it four times on the living subject since the last meeting. Once was in a case of gunshot wound and the man died five days afterward from an undiscovered wound of the kidney. The Connell stitch had repaired perfectly. In a case of gastro-intestinal anastomosis which we did for malignant disease of the pylorus I used it. The man had suffered for 18 months and his recovery was most marvelous. He gained 14 pounds the second week after the operation and this encouraged us to do more surgery on him, and so we tried to take out the growth. I cut into him the second time, when I found that the disease had done its share in increasing the weight of the patient. It had advanced very rapidly in three weeks and I am free to admit it was no longer an operable case. We proceeded and after much difficulty removed the pylorus. We had a good gastro-intestinal anastomosis from our previous operation. In our dissection we found it necessary to place a Murphy button between the gall-bladder and the ilium, but the patient died one week later. The repair made by the Connell stitch was perfect, but the Murphy button had failed between the gall-bladder and the ilium. The demonstration made by Dr. Coffey appears very nice on paper, and it may be a good assistant to the subject. So far as time is concerned, after having practiced the Connell stitch for some time, I believe I can make an anastomosis while Dr. Coffey is paring the potato. It is a case of emergency and Dr. Connell says we can not do harm. I am heartily in favor of Dr. Coffey's statement that a surgeon must be able to do his work without carrying with him a whole set of appliances.

Dr. M. B. Tinker, Baltimore—I think every one who has had experience in teaching students the methods of intestinal anastomosis on dogs appreciates the fact that it is a great deal easier to see it on paper than it is to do it. I think there is no surgeon who intends to practice any method of intestinal anastomosis who does not have preliminary practice on dogs or on some form of animal. We have used the Connell suture in one or two cases in the past year very satisfactorily. It is a stitch that is no more difficult to learn than most of the other methods and the results are certainly most excellent. As regards the Halsted suture, to my mind the most important fact brought out by Dr. Halsted was the necessity of taking in the submucosa. This is generally recognized and everybody knows it should be done. As to the use of the rubber bag, we find it is very convenient in anastomosis, particularly if there is a dilation of the gut before the point where you end the anastomosis. You may have the contracted intestine open and while we do use a rubber bag we teach our students to do the suture with needle and thread only. It is nearly always in the simple uncomplicated cases that we use the bag and it is a good thing in certain cases. In the teaching of students the point which I have found the most difficult to impress on them is surgical cleanliness in handling the ends of the intestines. It is far more difficult to make them understand this than to teach them the simple method of placing the suture.

Dr. James B. Bullitt, Louisville, Ky.—As to Dr. Eisendrath's paper, it seems to me to be of the very greatest importance and when we are able to peruse it in full we will find his conclusions will be of the utmost service to the profession. From what he has been able to tell us we are compelled to conclude that the mortality has been much diminished by the exploratory operation and the repair of the injuries. The important thing to bear in mind is not the danger of exploratory laparotomy, but rather the danger of not doing it. When the people come to understand this the mortality will be greatly reduced, much more than it has been in the last ten years. Like some other conditions, the public is growing to understand it. The danger often is not from operating, but from not operating, and it is in this class of cases that the principle is applied. The great difficulty is the tendency to shrink from doing what might be found to be unnecessary. When more surgeons have been impressed with the necessity of doing what may happen to be an unnecessary operation, we shall have a more united profession than we have had for a long time. The successful case passes out of mind very soon. The best way is to operate on these cases even if there are no positive or pathognomonic symptoms. If there was any particular symptom by which the surgeon would be able to say whether the operation was necessary or not, much of the difficulty would be done away with. The diagnosis is simple compared with deciding on the necessity of operating. The family will always object. In reference to Dr. Eisendrath's one case showing the danger of delay, it is certainly instructive. I remember a case which terminated fatally. It was that of a young woman who, while riding a bicycle, was struck by a passing vehicle. The shaft hit her in the abdomen, but she did not seem to be seriously injured. She was treated for five days by the family physician and it was thought she had a bad bruise. The symptoms became more alarming, she was decidedly swollen and discolored and there was gaseous distension and crepitation. A surgeon was summoned and her condition recognized as serious; immediate operation was done; a rupture of the abdominal wall had taken place and a coil of intestine had come out through it. The probability is that the rupture of the intestine was not primary but secondary and had the condition been realized earlier the life might have been saved. The abdominal cavity was free of infection and the infection which had occurred was in the cellular tissue beneath the skin. The operation was entirely successful but the patient died.

Dr. J. P. Lord, Omaha—I wish to call attention to one principle which enters into the production of severe injuries of the intestinal viscera on which we are apt to place too little importance, in case of apparently slight injuries of the abdomen. The books give considerable information in reference to the modus operandi of ruptures of the intestine, but they do not lay particular stress on what I consider the principal factor, which is hydrostatic pressure, a portion of bowel which is loaded with liquids or gas receiving a sudden impact is very easily ruptured. Unless this principle is borne in mind we will be slow to understand how a very slight injury could produce such disastrous results. This was well exemplified in two reported cases. One was struck upon the abdomen by a pebble and the other by a lathe. I am strongly in favor of the principle brought out in the paper in reference to early exploratory operation. Some of these cases practically present little or no symptoms until peritonitis has begun. The Coffey method appeals to me as a valuable procedure, but of course we can only determine this by trial.

Dr. W. J. Means, Columbus, Ohio—Injuries of the abdominal organs without external signs are of such frequency, and the prognosis so unfavorable if not recognized and treated properly, that the subject should receive the most careful consideration by the profession. Dr. Eisendrath's paper is a comprehensive study of the subject, and deserves much credit. There is one point mentioned by the writer that should be emphasized. It is this: Symptoms of shock or collapse are not always present or pronounced immediately after the injury. Much stress is placed on the signs in the text-books as evidence of visceral injury, and this undoubtedly leads the inexperienced physician to overlook grave lesions. If there is not much hemorrhage there is likely to be an absence of these signs, and it is only after the development of inflammatory or other physical symptoms that the injury can be positively diagnosed.

Laceration of one of the hollow viscera is more likely to take place if distended. In the primary examination I believe the fact should be determined if possible whether food or drink has been taken recently, and whether urine has been voided. I saw a case of extra-peritoneal rupture of the bladder a few days ago that emphasized both these points. The patient was drinking, and in a scuffle with a friend both fell, the knee of his partner striking him over the lower portion of the abdomen. He complained of pain, but aside from this there was no evidence of a rupture of the bladder. The symptoms that led to a diagnosis were infiltration of the cellular tissues of the lower portion of the abdomen, and absence of urine in the bladder. Forty-eight hours after the injury I made a suprapubic opening, and found the cellular tissues full of urine. There was a longitudinal opening in the bladder about 1½ inches long. The parts were properly drained, and the patient is now doing well. He stated that he had not urinated for at least 12 hours before the accident. Contusion of the abdomen should be watched closely for 24 hours, even when there is an absence of the cardinal signs of shock or collapse. I recently saw a case of appendicitis follow a severe contusion over the right inguinal regions. It developed within 48 hours. It might be suggested that the appendicitis was a coincidence. A careful study of the case led me to believe otherwise.

Dr. J. C. Munro, Boston—As to Dr. Eisendrath's paper and the symptom as regards the pulse, my own experience with internal hemorrhages is that the pulse frequently does not rise in from 12 to 24 hours. I instruct my house surgeon in all cases of abdominal contusion to call me if the pulse does not go up. This is a very important sign but is not sufficiently emphasized. I willingly confess to having opened several cases of abdominal contusion where there has been no hemorrhage or visceral injury, and I expect to do so in future until we have discovered some better means of diagnosis.

As to intestinal suture, I do not think it makes much difference as regards the form of suture used in many cases. Any suture properly applied will hold against peristalsis, but will not hold against an over-distended gut. It is very important to get gas moving within the first 12 hours to prevent distension and leakage.

Dr. Wm. Oldright, Toronto, Ont.—I want to refer to one or two rare cases of rupture of abdominal viscera which have come under my notice. Since 25 years ago, before we were as far advanced as we are now in the diagnosis and treatment of suspected cases, I made a postmortem in which I found a rupture not only of the gall-bladder but of the substance of the liver and gallstones and clots of blood. The patient would not do as I wanted him to, and I know he would not have submitted to an operation. In this case there was no history of extreme violence. Another interesting case was a rupture of the spleen in which the history showed no cause except fright from a fire having broken out in a house in the neighborhood of the patient. As to early operation, there can be no two opinions; at least, there should not be. Where there has been sufficient violence to justify one in supposing that there may be a rupture we would be negligent if we did not give the patient the benefit of the doubt and make an exploratory incision.

Dr. Eisendrath, in closing—I want to thank the members for their energetic advocacy of the stand I took in reference to early operation and early diagnosis. If we examine these cases carefully and observe every condition by palpation and percussion we will be able to make a diagnosis. As to the points made by Drs. Bullitt and Carmalt, I want to say the position is one of the most difficult in which a surgeon can be placed; to come to a patient within several hours after an injury to the abdomen with slight, if any, external signs, and have firm enough conviction to open the abdomen. As Dr. Munro has said, I would rather open a dozen cases unnecessarily than to overlook a single one that I might have saved. A diagnosis is not of much value 24 hours after the injury. It is still of some value in cases of hemorrhage.

As to the points raised by Drs. Lord and Means, bursting was formerly considered the principal cause of injury, but direct pressure necrosis is perhaps the most frequent way in which the injury occurs. As to the injection test for the bladder, a report of one case which I operated on shows that it was deceptive, and this is a general experience. As to Dr. Munro's point in reference to the pulse, this has also been my own experience and we can not place too much value on it. If the profession has its attention called to the frequency of these cases I am sure that there will be more lives saved.

Dr. Coffey, in closing—Dr. Carmalt stated that the potato had been used before. I am familiar with the various methods of using the potato as an aid to suturing in anastomosis. The principal point in the crushable button, which I described more than two years ago, was that it was very thin and crushable, and had a groove into which the ends of the intestines were drawn and were sewed by two rounds of continuous or interrupted Lembert sutures. The first round was made to penetrate the muscular coat of the intestine. The second includes only the peritoneal coat. The other potato devices have not been used with the intention to crush at the time of the operation, but have been left to digest *in situ*.

The method which I demonstrate to-day is a plain digestible tube, over which the ends of the intestines are held by passing two pins directly through the ends of the intestine and the potato, fixing the intestines at four different points. I think there is nothing that involves this principle in the literature of intestinal surgery. This tube, although being an entirely different arrangement and carrying an entirely different idea from my crushable button, is also made thin and crushable, so that it can be slipped away as soon as the pins are removed and crushed, in order to prevent any possibility of obstruction. This method also has the advantage of entirely eliminating any danger of narrowing the lumen of the gut during the process of sewing.

Dr. Connell believes the continuous Lembert suture will probable be found in the intestine as often as the continuous Connell suture. In answer to this, I will state that I have found the stitch hanging loose in all the continuous Connell operations, but found it in none in which the Lembert suture was used; therefore, it seems that the continuous Connell suture is more liable to be retained. He thinks there is much less danger of adhesion when the knots are on the inside. I think this is probably true, but the difference between the two operations is very slight as far as adhesions are concerned. The chief features of the Connell suture are, that it brings the surfaces together in such direct apposition. It is also quicker than any other kind of intestinal suture, except the continuous over-and-over suture with the pins, demonstrated after the paper was read.

Dr. Thompson brings the same objection to the potato that I have brought to the mechanical appliances, namely, "the potato will not be ready when you want it." I can not conceive of many cases in which we would be called on to open the abdomen, and do an intestinal anastomosis without first suspecting there was something wrong. In a case of strangulated hernia you would certainly suspect it, and be prepared to do an anastomosis; in an intestinal obstruction you would, no doubt, be expecting it. Even if you were not expecting it, the potato could easily be prepared in five or ten minutes by a nurse, or even a bystander, and boiled for a minute or two. I think, therefore, this is not a point worthy of great consideration, for you will find a potato or some digestible substance almost everywhere you will find a patient.

The man who most needs to understand this operation is not the experienced surgeon, nor the man who has practiced all these operations hundreds of times, but the man who would probably be called on to do one intestinal anastomosis in a lifetime, and there are very few chances that when this time comes he would be able to do an intricate operation like the Connell suture.

Personally, as I have stated before, I consider the Connell suture the ideal method for surgical specialists, but there are thousands of abdominal sections done annually in this country by men who will never understand the Connell suture. In fact, only a comparatively few men have paid sufficient attention to intestinal surgery to enable them to do good intestinal surgery, or to understand the details of any intricate intestinal operation. It is for these reasons that the Murphy button has become so popular, and this is the only way it will retain its popularity among the masses of physicians. The leading surgeons of the country will not continue to use the Murphy button to a great extent.

Dr. Tinker thinks it is hard to make students understand asepsis when the bowel is kept open during the entire operation, as in the Connell operation. This is certainly true, and this is a point in favor of the method which I have just demonstrated, because the intestinal canal is absolutely closed as soon as the pins have been inserted. Dr. Munro thinks that any suture will hold if properly placed. I am certain this is true, for when I began my experimental work, no matter what operation I used, I could not get a result which would bear distension with air. After I had done a large number I found that no matter what method I used my results were always good.

The chief point, in my work as demonstrated to me, has been the necessity of using a method which does not require an apparatus, such as the Connell method, which is largely limited to surgical specialists, or the pin and digestible tube method which I have demonstrated to-day, and which can be successfully performed by anyone who pretends to do abdominal surgery.

If the president will allow me one minute, I would like very much to discuss Dr. Eisendrath's paper, but instead of commenting on it, I wish to present a method of suturing the solid viscera, which is mechanically correct. Those who have tried to suture the liver well know that the tissues will not hold sufficient pressure to control the hemorrhage from vessels of any considerable size. The cases which have been reported as having been controlled by direct sutures, I think would probably not have proven fatal if no suture at all had been used. A wound of the liver which does not involve one of the large veins, it is reasonable to suppose, would be like a wound of any other part of the body which does not involve any large vessels, in that the hemorrhage would cease of itself. Quilt sutures of all kinds, no matter what material is used, will be a failure in the suture of the liver if a direct suture is used the same as if no suture had been used; it is, therefore, necessary to use indirect pressure, the same as is used by mechanics of all kinds in sustaining roofs, supporting bridges, etc., across a space without support.

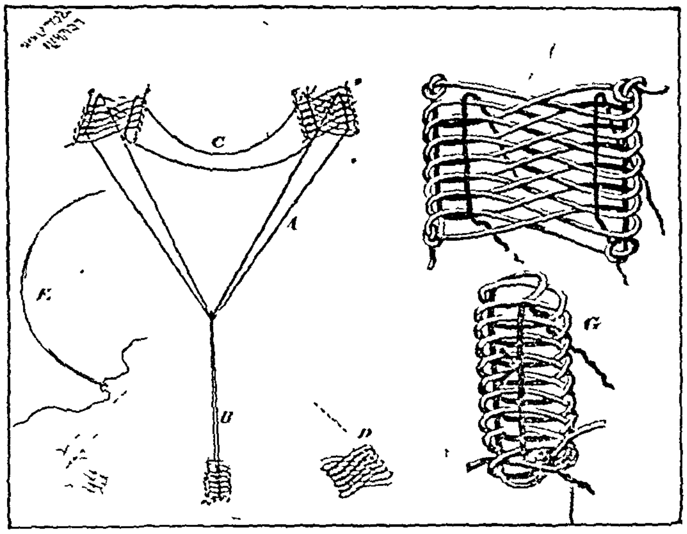

Fig. 1.—Mechanical drawing of the Y stitch. (*A*) Long quilt suture placed at the outer edge of catgut support (*B*) Loop thrown around the deep quilt suture and supported on the opposite side by a single catgut support. (*C*) Superficial quilt suture passed through the inner edge of the catgut support. (*D*) Dotted lines showing the loop necessary in case the cut is entirely through the liver. (*E*) Long, slender, round, curved needle. (*F*) Double catgut mat for support of two sutures (*G*) Single catgut mat for support of the anchor stitch.

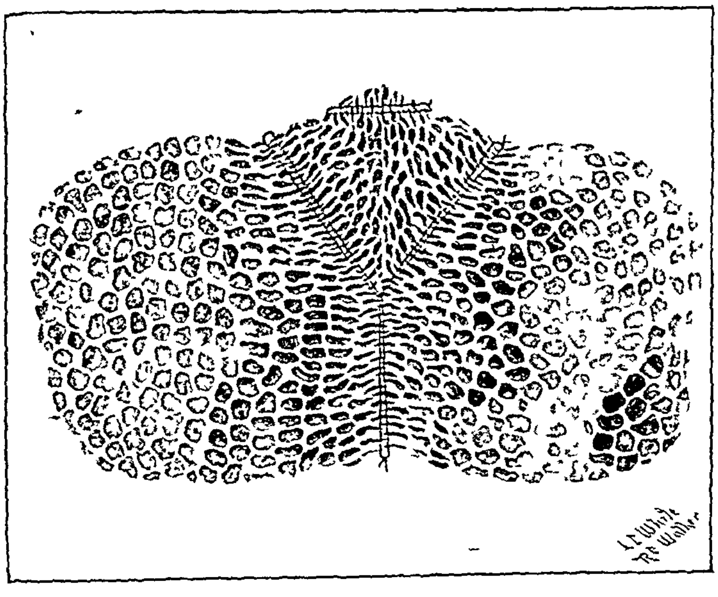

Fig. 2.—A section of the pith of a gourd sewed with the Y suture and superficial quilt suture, showing the direction of the stitch pressure by the compression of the pores.

The accompanying illustration (No. 1) represents a diagram of a method which is mechanically successful in suturing the liver tissues. All the pressure comes on Glisson's capsule at three or four points, which is protected by a weave of catgut. The pressure is all over the center of the incision and obliterates all space at the bottom.

Two sutures are used, one of which is applicable to an incision which does not penetrate the liver entirely, the other is applicable to wounds in which the liver is severed through and through. One we may call the Y-suture, the other the X-suture. The Y-suture is placed as follows: A round, curved needle, at least four inches long, armed with catgut or silk, is passed through the catgut support to the bottom of the incision, comes out on the other side, passed through another catgut support, re-enters through the support on the same side, goes back parallel to the other stitch and comes out through the support which was started, making a quilt suture. A suture is then passed from the opposite side of the liver, either straight through or indirectly, as may be convenient, includes the two threads of the quilt suture in its loop, turns and comes out on the bottom of the liver again, both ends passing through a single catgut weave, and is now tied in the form of a quilt suture, thus drawing the other suture into the bottom of the cut. The first suture is now tied and any amount of pressure can be used for the line of pressure is not against the suture, but is on the catgut support. In this way the bottom of the wound is brought in absolute apposition, and any amount of pressure

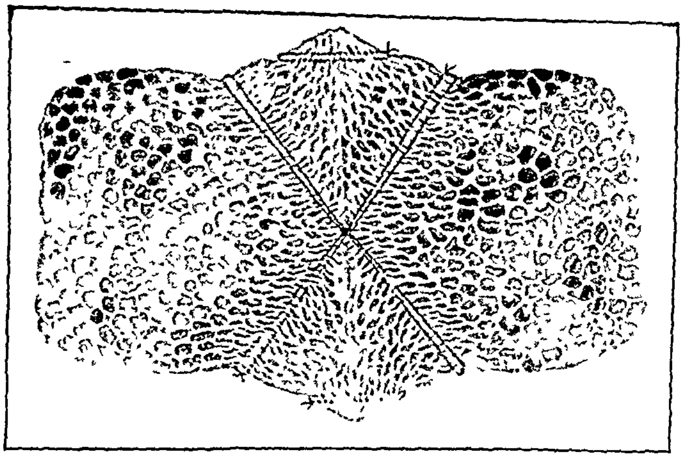

Fig. 3—X suture, applied in the same manner after a cut entirely through *the liver substance.*

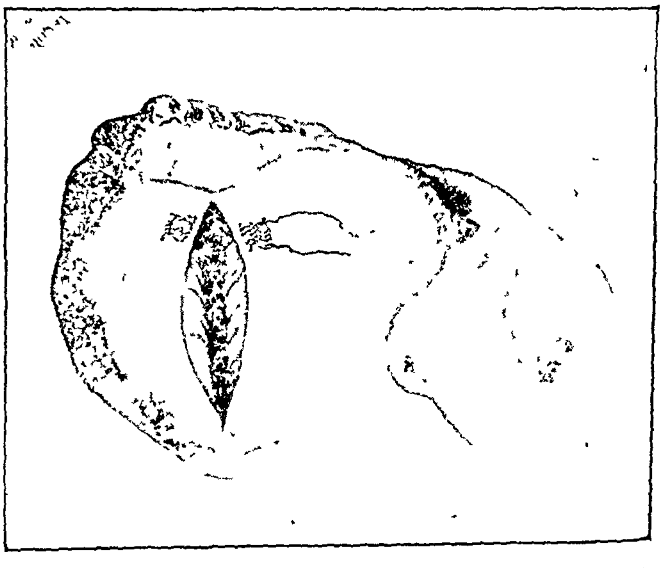

Fig. 4—A sheep's liver with the catgut support and the deep quilt suture applied ready to tie with the anchor stitch from the under side thrown around it.

desired may be used. This does not bring the surface of the wound in as close contact as is desired, therefore a second quilt suture is passed through the edges of the support nearest the wound, simply taking in the capsule.

In this way the tissues are absolutely brought in contact; in this way the pressure can be brought to bear for closing the wound of the liver, as in any other part of the body. In closing the wound of the liver which extends entirely through its substance, a modification must be used. Instead of the single suture which goes into the bottom of the suture a second quilt stitch is passed through both sides at the bottom, the same as the Y-suture above, interlocking the two sutures in the center of the wound.

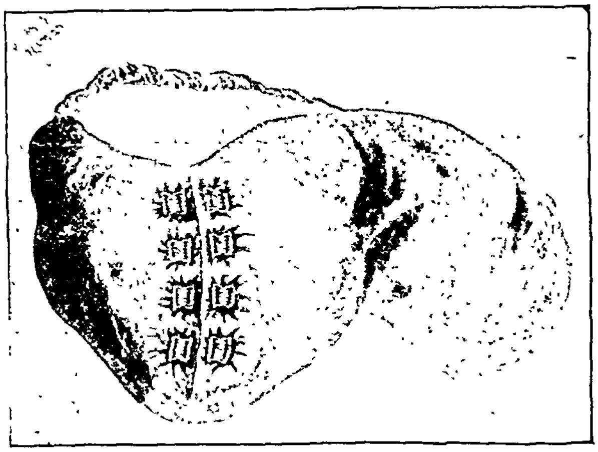

Fig. 5.—A sheep's liver which has been sutured by this method.

In the second illustration you will notice a diagram of the stitch which has been passed through the pith of a gourd and in this way the pores have been partially closed along the line of pressure, which shows accurately the line where the pressure is made.

The points which I believe to be original are the uses of the catgut weave and an indirect or angular pressure made by a counter traction suture.

PRINCIPLES CONTROLLING OPERATIVE INTERFERENCE IN STRABISMUS.*

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DENVER.

Binocular vision as possessed by man is a function of wonderful accuracy. With normal acuteness of vision the deviation of the visual axis one-fiftieth of one degree from the fixation point will produce intolerable confusion and blurring. A deviation of one-fiftieth of one degree means an error in the relative lengths of opposing muscles of 1/240 of one millimeter, 1/6000 of an inch, 1/2 of the diameter of a red blood corpuscle. Simply from the standpoint of mechanical exactness what are the chances of making a perfect adjustment of the ocular muscles by operation?

The first thought that should guide us in the operative treatment of strabismus is: Operations do not cure strabismus, but they can lessen its amount so that it may pass unnoticed or may be overcome by other measures. At its best, operation may be a necessary step toward cure. More frequently it is but a means of diminishing and rendering less noticeable an incurable deformity. Recognizing the essential limitations thus placed upon operative interference, what are the principles which should guide us in determining the advisability of an operation, the particular form of operation to be chosen, and the immediate mechanical effect at which to aim?

The direction of the eye in the orbit is determined by two classes of structures—neuro-muscular and connective tissues. Speaking broadly, the eyeball rests in a hammock of connective tissue, in which it is swung and turned by the contractions of the extra-ocular muscles. The tissues immediately in contact with it move with it, those farther away share less in its motion. The comparison with a ball swung in a hammock is far more exact than to speak of it as a ball set in a socket joint. These connective tissues prevent the globe from being drawn back into the orbit, and may at any given time exert an influence that will determine the direction of the visual axis, when not overcome by preponderating muscular influence. But when one or more of the muscles are actively contracted the influence of the connective tissues, other than the muscular insertions, becomes comparatively insignificant, except in limiting the most extreme rotations. The problem of strabismus is practically a problem in neuro-muscular dynamics.

In attempting to solve it we must remember that the length and strength of a muscle depend on the nerve impulses passing to it. A muscle exists simply that its length may vary. That is its whole function. Equally characteristic is its capacity for hypertrophy under the influence of appropriate nerve impulses, and for atrophy when these are cut off. In view of these facts the first question to be asked regarding operative interference is: How will it influence the innervation of the muscles which act upon the eyeball, or will it leave that innervation quite unaltered?

According to the answer to this question strabismus cases are to be divided into two classes. Those in which operation is likely to modify the innervation, as in concomitant squint, where it will render possible binocular fixation, which may be operated upon early, but, rather tentatively, with great care to avoid any excessive effect, or any unnecessary disturbance of parts. The other class includes those in which there is no probability that operation will change the innervation of the muscles, as in paralytic strabismus; or in concomitant strabismus in adults, without any possibility of producing binocular diplopia, and without reflex binocular co-ordination of any sort. In these cases operation should be deferred until the extent of deviation has become quite fixed and incapable of further favorable modification by non-operative measures. This will be for paralytic squint many months or years after the occurrence of the paralysis. For concomitant squint it will be only after the most thorough trial of appropriate lenses and exercises calculated to modify the innervation of the muscles, and not until the years of early childhood have been passed or possibly not until adult development has been reached. In any such case the time for operation will be not until long observation has shown that the deviation is quite constant, or that the limits within which it varies are stationary. When such a permanent condition is to be altered by operation the operation should aim at the most exact mechanical adjustment of the visual axes possible, with proper consideration of probable cicatricial changes, and an allowance for slight tendency toward divergence with increasing age, in eyes removed from the influence of binocular co-ordination and excessive accommodative effort.

The idea that the setting forward of the insertion of one of the recti muscles increases its influence upon the rotation of the eyeball, and that the setting back of such insertion diminishes that influence, has been the basis of all previous arguments for operative interference in strabismus. It need not be dwelt on here. But it should be pointed out that any such increase or diminution of influence may be *entirely nullified by changes occurring* in the muscles. Thus, the muscle, the influence of which is supposed to have been diminished by tenotomy, might, under the needful nerve impulses, undergo an hypertrophy that would restore the excess of influence it had lost. Unintended effects of operation may cause a similar result. Thus, after advancement, a firm adhesion between the advanced tendon and the sclera may cause the muscle to exert its influence on the globe farther back than its original insertion, and thus cause *a limitation rather than an extension of its influence.*

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* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

Lateral displacement of the tendon of insertion is a means of modifying the influence of a muscle upon the globe, that has been neglected. If one could move the insertion of the internal rectus from the nasal side of the eyeball to a position directly above the cornea he would cause it to rotate the eyeball upward instead of inward. By moving the insertions slightly in that direction the influence of the muscle would be modified to a corresponding extent. By moving the insertions of the superior rectus and the inferior rectus toward the nasal side of the globe they could be made to supplement or replace the adducting influence of the internal rectus. Upon this effect of lateral displacement may be based certain new operations for strabismus; and this effect should be borne in mind in attempting any operative interference.

To think and speak of each muscle as effecting the movement of the eyeball in a single direction is simple and convenient, but it is entirely incorrect. An ocular muscle turns the visual axis toward its insertion only when the direction of its action and the visual axis lie in the same plane. The internal rectus can turn the eye directly in, and the external rectus can turn the eye directly out, only when the visual axis is horizontal. When the eye is turned down the internus tends to turn it down and in, or the externus tends to turn it down and out. When the eye is turned up the internus tends to turn it in and up, the externus to turn it out and up. Only when the eye is directed considerably outward, a quite unusual position, can the superior rectus turn it simply upward, or the inferior rectus turn it down. When both the superior and the inferior recti contract, the eye being directed forward, they tend to turn the eye in. Their influence in this direction increases as the eye is turned in. For a position of strong inward rotation this influence of the superior and inferior recti may be greater than that of the internal rectus. When both the superior and inferior oblique contract they tend to turn the eye out. Their influence in this direction increases as the eye is turned outward. For a position of strong outward rotation this influence of the obliques may be greater than that of the external rectus.

On the other hand, when the eye is turned strongly in the tendency of the obliques to turn the eye out disappears, and may even be converted into a tendency to turn the eye in. That is, when the eye is turned strongly in, five of the ocular muscles, the internal, the superior and the inferior recti, and the two obliques tend to turn the eye in, while only one, the external rectus, tends to turn it out. When the eye is turned strongly out, it is true, that to a still greater extent, five of the muscles, the external, superior and inferior recti and the obliques, tend to turn it out, while only the internal rectus tends to turn it in. This beautiful provision of Nature for reinforcing, and thus rendering easy and steady, the extreme ocular rotations ought not to be forgotten when we proceed to operative interference with strabismus.

The muscle which primarily turns the eye in a certain direction, as the internus rotating the eye inward, may be called the primary rotator. The four muscles that may come to its assistance can be called secondary rotators. The opposing primary rotators tend to equilibrium with the eye in a central position, and the visual axis directed forward. As such a position is departed from the primary rotator toward which the eye turns loses power, while the opposing primary rotator, placed upon the stretch, is rendered more powerful. Thus, as the eye is turned toward the nose the internus loses efficiency, the externus gains it. As the eye is turned toward the temple the externus becomes less influential and the internus more so. The tendency of the primary rotators is always to bring the eye back from extreme positions to a central position.

The tendency of secondary rotators is always to turn the eye farther from the central position; and their influence increases as the deviation becomes greater. It is chiefly the influence of the secondary rotators that perpetuates strabismus and renders it extreme. Strabismus operations will become scientific and satisfactory in proportion as they deal with the effect of the secondary rotators, either by what is done to the primary rotators or by extension of operative interference to the secondary rotators themselves. And every operation should be planned with reference to the secondary as well as the primary actions of the muscle or muscles which it is designed to affect.

THE NON-OPERATIVE TREATMENT OF STRABISMUS.[*]

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PHILADELPHIA.

In 1893 at the meeting of the Ophthalmic Section of the Pan-American Medical Congress, when operative treatment of heterophoria was universally practiced by American oculists,[1] I ventured to say that it seemed to me unphysiologic, unnecessary, without analogy in the treatment of similar incoördinations elsewhere in the body, requiring an impossible delicacy of execution, without definite prognosis, and unsatisfactory in result. In the *Medical News* of Oct. 14, 1893, and Nov. 18. 1893, I stated more fully my reasons for the extempore statements, and the methods I had found successful instead of tenotomies, graduate, undergraduate or postgraduate. I think that there are to-day extremely few tenotomies performed for heterophoria, in comparison with the thousands that were being performed.

Following the reaction against the operative furore in heterophoria there has arisen a wise restraint in operations for strabismus.[2] As I have nothing to recant concerning the absolute inutility of operations in heterophoria, so I expect to have nothing as to a similar conviction concerning operations in strabismus. Catch the babies early enough and no operation will be needed, provided that requisite intelligence, patience, and conscience are brought into play. In my private practice I have in six years seen no case that I believe needed operation, and I have seen none benefited thereby—at least none that could not have been more benefited by other methods of treatment. In the limits required for our papers, I can not set forth in detail the requisite proofs of this statement, which will undoubtedly seem as extreme to many as was the similar statement made nine years ago as to heterophoria. Those who still operate for heterophoria will, of course, deny the contention, but for those who do not operate in heterophoria the epitome and essence of my experience and of all I shall have to say is contained in two statements, which I believe to be incontrovertible truths:

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[*] Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

[1] The greater part by far of the work of the American specialist in diseases of the eye is not surgical. It is distinctly higher and nobler than surgery; it is the prevention of disease, and it is also chiefly medical in curing patients of systemic disease. Let us therefore disallow the term *ophthalmic surgeon*, and call ourselves ophthalmologists, or, because it is shorter and better, oculists.

[2] Let us always say strabismus instead of squint. The latter word has a number of incorrect and absurd meanings in the lay mind.

1. *All strabismus is preceded by heterophoria;* intervene during this heterophoric or latent stage and every case is preventable. The duty of every good physician is to prevent disease. The heterophoric stage arises so early in life and may be so short in duration that the period of therapeutic opportunity may have passed without notice. But there will still remain a stage when rescue is possible, because even in the most fulminant cases nature will struggle against ruin, and preserve possibilities of cure for a long time.

2. *All chronic or permanent strabismus is preceded by a stage of acute, functional, or incomplete strabismus,* during which there has not been an utter renunciation or annihilation of the means and mechanisms of binocular vision. In this stage there is such a mixture of heterophoria and heterotropia that the condition is not describable by either name and to designate it properly we must use some such terms as exophoria-exotropia, esotropia-esophoria, hyperphoria-hypertropia, etc. During this period, long or short, according to the infinitely varying conditions, the physician's intelligent coöperation with the subtle wisdom and clinging to hope of the child's unconscious cerebral organism, will save the eye from ruin, preserve binocular vision and prevent deformity.

The chief duty of every good physician is to prevent disease. Surgery, the despair of medicine, has place only when prevention and natural methods of cure have been exhausted. The education of the community, therefore, becomes our highest obligation. The best method of education as to strabismus consists in demonstrating the fact by prevented and cured cases, that operation is not necessary. Every good oculist has hundreds of happy patients who have no deformity and who have binocular vision—so long as their spectacles are in place. Raise the lenses and instantly there is strabismus! That is a demonstration convincing to every one. I know of no more heinous sin of ophthalmologists than one that has been and still is revealed almost every day in my practice, the sin of telling parents that operation will be required but not before the child is seven or nine years old. At that late age, generally speaking, irreparable injury may have been done. The neglected hyperopia, astigmatism, or anisometropia may have produced the irremediable amblyopia, loss of innervation, psychic suppression of the image of one eye, etc.

I am not supposed to go into the question of the cause of strabismus, but, as all my treatment is based upon a theory, I may say that for all practical purposes, i. e., with unimportant exceptions, in the cases under discussion the poor abused muscles and tendons are not abnormal as a causal agency. All "myology" resolves itself, of course, into neurology. The incoördination of innervation which causes all heterophoria and strabismus is a functional disease, and is caused by the fact that the peripheral organs are so optically dissimilar and defective that binocular vision is impossible. Anisometropia and astigmatism are the initial sources of the impossibility of binocular vision, in the vast majority of cases.

I should premise that the foregoing statements require some self-evident exceptions which not only test, but often prove the rule. I except traumatic strabismus (in which class I include strabismus, the result of operation), paralytic strabismus, most cases of alternating strabismus, and some anomalous cases that defy all rules of diagnosis and treatment. But even in these no operation is usually advisable.

The non-operative treatment of strabismus naturally divides itself into:

1. Prophylaxis.
2. The treatment of ametropia.
3. The treatment of heterophoria.
4. The treatment of amblyopia.
5. The treatment of physiologically curable strabismus.
6. The treatment of alternating strabismus.
7. The treatment of anomalous cases.
8. The treatment of incurable cases.

1. THE PROPHYLAXIS OF STRABISMUS.

A. Public instruction should be given, in the many possible ways, that strabismus may be prevented, and in its earliest stages is curable without operation, but only on the condition that the child is put in charge of an oculist at a sufficiently early age. Parents, especially those with considerable ametropia or amblyopia, should be warned of the danger of the probable inheritance of ocular conditions in their children which may lead to strabismus. The eyes of all children from the age of one year should be periodically examined by the expert, in order to detect at the very earliest possible age any conditions which if neglected may lead to strabismus.

B. The individual child should be taken in hand by the oculist at the very earliest day when heterophoria, temporary, or acute strabismus is diagnosed.

2. THE TREATMENT OF AMETROPIA.

This primarily consists, of course, in getting proper glasses on the child as soon as it may safely wear them. It may not be necessary or advisable at this time to demand that they be worn all the time, but only at stated periods. The age at which spectacles will be accepted is much earlier than is supposed. If they are correctly prescribed, made, and worn, and if they are needed, a child of two years will soon cry for them, or cry without them, so pleasant is the result of their use to the shaping nervous system struggling to establish binocular vision. In the child under six years the sole successful method of diagnosing the ametropia is by means of retinoscopy. That there is probably not an "ophthalmic surgeon" in all Europe who can use this method with accuracy shows how far we are as a profession from knowing our science, practicing our art, or doing our duty. Upon the accurate diagnosis of the hyperopia, myopia, astigmatism, and anisometropia depends the entire success of the non-operative treatment of strabismus, and this diagnosis in young children can not be made without retinoscopy.

What the prescription shall be after the diagnosis of the static refraction has been made, will test the oculist's skill and judgment to the utmost. Every obstacle should be eliminated, every inducement made to the weak, injured, struggling efforts of the ocular mechanism toward binocular vision.

Mr. Priestley Smith in his Bowman lectures gives the "refraction" in 310 cases of convergent strabismus as follows:

		No. cases.	Per cent.	
M.		3	1	
E. to H.	1.5 D	34	11	
H.	2. to 3.5 D	106	34	88
H.	4. to 5.5 D	122	39	
H.	6. D. and over	45	15	

Measured, of course, by the ophthalmoscope! Thus it is confessed that inadvertently the two great, almost the sole causes of strabismus, astigmatism and anisometropia, are utterly ignored!

It is said that the influence of hyperopia has been overestimated as a cause of strabismus; that hyperopia prevails also in non-squinting children; that the vast majority of the non-strabismic have hyperopia; that many emmetropes have strabismus, etc. The overestimation of hyperopia as a cause of strabismus is likely to be made by those only who have not learned the art and necessity of retinoscopy, and who have not suspected that the great chief causes of heterophoria and strabismus are anisometropia and astigmatism. That hyperopia exist in the orthophoric, and that the vast majority of the non-strabismic are hyperopic has nothing to do with the matter, as these statements ignore the true causes of strabismus, and the infinitely varying degrees of resistance to morbid stimuli. Everybody has repeatedly disobeyed the laws of hygiene in diet, and yet but few have dyspepsia. There are tuberculosis bacilli in all our lungs, but most of us have not tuberculosis. As to emmetropia in heterophoria and strabismus, I have never seen a case, and I do not believe such a case has ever existed.

3. THE TREATMENT OF HETEROPHORIA.[3]

I have little to add or change in the paper I had the honor to read before you last year, so that repetition of its conclusions seems scarcely necessary. I am still convinced that no operation is necessary in the treatment of these cases. I do not deny that others have had good results from operation, but I have never seen any such results, and one of the many bad results that I have seen seem to me to outweigh a large number of the possible good ones. I have never had a case of exophoria that was not curable or in which all symptoms were not relieved by thorough-going prism-gymnatsics. I have had many cases of exophoria running as high as from 20 degrees to 30 degrees (which means exotropia when the internal recti are not intensely innervated), reduced by gymnastics to normal balance, or if not entirely orthophoric, given an adduction power equal to all demands. Sometimes the exophoria has been combined with hypertropia, the latter condition disappearing with cure of the exophoria. Case 5701 was also complicated by incurable Bright's disease, and yet a hypertropia of 8 degrees and exophoria of 7 degrees both disappeared under the exercises. It also happens that high degrees of exophoria-exotropia, or the reverse, require no treatment, or the patients will submit to none. Case 3484 has 18 degrees of exophoria and not a particle of resultant discomfort. I have a patient, a literary worker, with 20 degrees of esophoria, without a symptom of ocular or reflex trouble. Case 1925 has a hypertropia of over 12 degrees, due to chronic lead poisoning, and although he has 20/20 each eye he has not a symptom of which he complains. Case 4191 has 7 degrees exophoria and no symptoms so long as her ametropic glasses are worn. But she has 120 degrees of cultivated adduction power. Case 4617 had an esophoria-esotropia of about 18 degrees which it took 2 years of gymnastic training to reduce to normality, i. e., to esophoria of 2 degrees or 3 degrees. It is unnecessary to add that in a considerable number of cases by correction of ametropia alone, the heterophoria disappears in time, providing the correction is such as to help nature in her spontaneous normalization of equilibrium. Case 3535, for instance, had 15 degrees of esophoria, which in 4 years became normal. In hyperphoria-hypertropia, partial correction, reduced as normality is approached, is required to be added to the ametropic correction. Case 3681 had 15 degrees of hypertropia, and for years avoided operation at the cost of intense suffering. Correction of his ametropia and 6 degrees prisms fused in his lenses, gave him absolute relief.

4. THE TREATMENT OF AMBLYOPIA.

So far as essentials go I also have nothing of importance to add to a paper[4] on "Amblyopiatrics," read before the Philadelphia County Medical Society ten years ago. As the reprint of this paper is out of print, and as many may not have noticed this paper or not have it at hand, I herewith reproduce selections from it:

> That no name exists for the therapeutics of amblyopia in the cases in which the defect is ascribed to "disuse," leads to the astonishing fact that the desire or the attempt to cure amblyopia does not exist on the part of ophthalmologists. If a child with one weak and deformed leg is brought to the orthopedic surgeon, he does not say, "Oh, well, the child has one good leg, let it go on with that alone." If a finger or hand is injured, does a surgeon ignore its needs and congratulate himself and the patient that the rest of the fingers or the hand is all right? But it is a literal truth that an argamblyopic eye (i. e., one amblyopic from disuse), brought to the oculist is dismissed without care and without attempt at cure. In no text-book with which I am acquainted are either principles or rules laid down to govern the treatment, and no hint is given that any treatment is desirable. Not only so, but positive instructions are laid down that, carried out, prevent the weakened eye from ever regaining its lost power. It is as if the surgeon should say of a lame leg: "Strap it up out of the way; it can't work with the other, or as well as the other; let it go." Listen to this extract from the latest text-book on ophthalmology, fresh from the press.
>
> "IN ANISOMETROPIA WE GIVE THE SAME GLASSES FOR BOTH EYES, OR CORRECT ONLY ONE EYE AND PLACE A PLANE GLASS BEFORE THE OTHER.—Fuchs, Text-book on Ophthalmology."
>
> I set this sentence out in capital letters, as displaying as much ophthalmologic error and therapeutic sin as could easily be gathered into so many words. Another popular treatise puts it in this way: "For the class of patients whose ocular discrepancies (anisometropia) are so great that they always use only one eye, nothing is to be done save to aid as perfectly as possible the working member in case it needs assistance. The other is to be left to purely ornamental functions."
>
> Any number of such quotations could be added were it necessary to show that the established conviction and practice of the ophthalmologic profession is not only to completely ignore the need and the duty of treatment of argamblyopia, but even to so further handicap eyes thus afflicted by measures of anti-therapeutics as to render recovery impossible, and even to increase the defect.
>
> In square and absolute opposition to this I contend that every amblyopic eye is a sick eye, and that it is a physician's first duty to cure, whether it be eyes, or legs, or bodies.
>
> Our impotent willingness to permit such a lazy method of non-treatment is a distinct reproach and discredit to us. It is simply untrue that patients with anisometropia will permit a proper and helpful correction of each eye. In some 2500 cases occurring in private practice I have found none such except two or three who have simple myopia in one eye and approximate emmetropia in the other. But for obvious reasons,

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[3] Heterophoria of high degree is not only potential, but, when the eye is at rest, actual heterotropia; therefore, we must describe such cases as exophoria-exotropia, hyperphoria-hypertropia, etc.

[4] Published in the Medical News, Dec. 31, 1892.

in such cases there is no amblyopia, and they are, therefore, out of the count. Of course, correction of anisometropia may be inconvenient and even uncomfortable to the patient for a short time, but could one expect the abnormal habits and weakened organs of a lifetime to resume normality in a few days? Do orthopedic surgeons thus treat the consequences of spinal curvature or talipes? Instead of the supine let-alone policy we should seek to save and to heal and to strengthen. Instead of non-response to treatment and inability of the patient to wear binocular correcting glasses, I have, in fact, been delighted and astonished to witness how soon response comes and how short or non-existent is the period of discomfort. The weakened, almost blinded eye, soon reacts to the spur of kind, intelligent helpfulness, and, as month by month, one watches these eyes improve and gather strength, one feels the pride and pleasure of the true physician in his true work. I have never failed to find such reaction even in the most hopeless cases of argamblyopia.

There is a very suggestive illumination thrown back upon the question of etiology by the practical results of intelligent and persistent therapeutics. When large numbers of amblyopic eyes recover their lost acuteness of vision by means that permit and necessitate their functionalization, the dogmatism of authorities and the negligence of oculists receive a suggestive comment amounting to refutation, both of the theory and of the sadly common resultant practice, that the amblyopia is cerebral or that it is the causal agent of the muscular or ametropic anomaly. Almost without exception, my cases teach me that amblyopia is argamblyopia. (It goes without saying, of course, that amblyopia due to fundus-lesions and media-lesions are out of the count.) And when such improvement of vision follows the removal of the ametropic or heterophoric hindrance it, *ipso facto*, justifies the acceptance of the theory of effect-amblyopia implicit in the word coined.

But whether the one theory or the other be the true one, the therapeutic sin of not attempting to bring back the lost power of these handicapped and half-ruined eyes, is a sin that cries out against us. The number of persons going about, and going on to the age of cataract-possibility, with such eyes, is surprisingly large. Whether with growing practice one sees more patients, or whether such argamblyopic patients, neglected by others, drift into one's hands, one is amazed at the frequency of the fact, and that instead of heroic effort to save, there has usually been pursued a no-policy of the most atrocious and let-alone indifference. Now, this policy of laisser-aller is to me incomprehensible, unethical, anti-medical, and impolitic, and the object of this writing is to protest against it, and to offer proofs that it is in all these ways wrong. "Far from telling me how to save the bad eye, my doctor never suggested that it could or need be saved"—that gives the hint of the impolitic policy. "I now have cataract in my best eye, and the other has been no good for many years"—that should deeply sting the heart of the negligent physician—if he could hear it.

The practice may partially be a conscious or unconscious result of what I believe the false teaching that the amblyopia is cerebral or idiopathic, or is the cause of the co-existent strabismus or insufficiency, or again, of the still more execrable teaching to correct the ametropic defect of one anisometropic eye, leaving the other to go to the dogs.

The functionalization of argamblyopic eyes consists, of course, in three things: 1, the correction of the ametropia; 2, the reinstatement of the muscular balance, if imbalance exists; 3, exercise.

As to the correction of ametropia, there are a number of peculiar difficulties and problems. These each refractionist will overcome and answer according to his teaching, his habits, or his intelligence. Assuredly, no hard-and-fast rule will suffice, nor can such a rule be even approximately formulated. Each case will be a study in itself, requiring the most accurate discrimination of judgment, and the finest delicacy of testing. In an eye of which the neurologic elements and the cerebral centers are certainly weakened and partially atrophied, the failure to hit exactly the right kind, degree, or precise proportion of help required, foredooms at once to failure. The very breath of life in such an eye is trembling between endeavor and renunciation. A shade of over-correction or of under-correction, a slightly misplaced axis of astigmatism, a misplaced or maladjusted spectacle, a touch at the wrong place, the lack of a wee bit of help at the right place—anything except the right thing—smothers the little remaining power of recuperation, and proves a tiny load too great for the tiny forces to lift. We are dealing with infinitesimals, and the keenest and swiftest perception will win where a less subtle discrimination will fail.

It is evident that such eyes must be nursed and encouraged, as it were, into convalescence. Frequent re-testings will be required; frequent adaptions to the changed conditions sure to follow; watchful care if one weak part of the complex system fails to respond or temporarily gives way; constant readjustment of the spectacles following and stimulating the renascent powers; and meeting them with the precise modicum of lessened or increased aid—these, and many such methods of guiding and guarding, must be kept in mind until full health is restored, and the convalescent eye enjoys and shares the labors of its fellow.

In the same way the reëstablishment of muscular coördination, still further complicating the problem, will be brought about according to the peculiarities both of the case and of the physician.

But these questions having been settled, gymnastics will remain as the very heart of the matter and crux of the difficulty. An eye the visual power of which has from disuse fallen to 20/100, let us say, and reduced to only the temporary holding of the image of Jaeger 14 or 18, will not participate in binocular vision, however perfect the image formed on the retina, or however balanced the muscles. It must be exercised and gently forced to function. It is clear that the good eye must be temporarily thrown out of use, and the weakened brother put to work alone. The kind and the amount of exercise will again depend on the retained visual acuteness of the eye to read print, large or small, and the retained power to continue this for a longer or a shorter period of time. Here again appears the necessity on the part of the physician of careful estimation by a trained judgment to give the proper instructions.

But the final success will depend upon the patient's persistence, patience and coöperation. This coöperation will only be certainly gained by making him (or, if a child, his parents) thoroughly understand just what is desired, and the full significance of it all. To him it should be explained in detail and fulness, that exercise only develops function; that as years go by, non-exercise will still further and hopelessly ruin the eye; and that as age approaches, the possibilities of danger to the good eye (always doubled if there be but one) are greatly increased by the liability of cataract, of inflammation, of injury, etc.

The method of monocular gymnastics in these cases will depend upon the interest of the patient, the age, occupation, etc. In children too small to wear glasses, or to wear the blinder willingly, I keep the good eye under continuous mydriasis for weeks, or even for a month or two. I have, during the past year or two, ordered the patient to get a disc of black rubber fitted with a hook, so that it may be hung on the spectacle-lens in front of the good (unclosed) eye. Such discs are supplied by my opticians, who have prepared them in accordance with my request. The patient is to read print of a size that can be easily distinguished, and only so long as signs of positive discomfort of weakness do not appear. Some patients can at first hold the image for but a few seconds. The shorter the necessary duration of such periods the more frequently they should be undertaken. Some patients can read or work with the single eye for an hour or two without trouble. The plan that has proved of most service, and has been productive of the best results, is to use the "blinder" when eating the meals. If living at home, the extra blinder is left at the plate as a reminder, and the practice is excused by friends. It gives an hour or more daily of varied and easy exercise without loss of time or the annoyance of special attention to the matter. I have a patient, a jeweler, who works at his bench with his blinder, in all one or two hours a day, and whose power and vision have been greatly improved thereby.

A certain proportion of cases do not report; a few get tired, or are indifferent to the matter. The following cases illustrative of the method and of its results may be cited:

Case 1.—Mrs. H., 19 years of age, has had severe and continuous headache from early childhood, with gastric trouble, malnutrition, etc. Natural vision is R. 20/20; L. 10/200. Mydriatic refraction =

R.—sph. 0.25⊃+cyl. 0.50 ax. 90°=20/20+.
L.+sph. 2.50⊃—cyl. 5.50 ax. 180°=20/40.

With muscular balance.

After the return of the accommodation, and with the proper correcting glass, the left eye could read only Jaeger 14 at 12 inches.

Monocular exercise was ordered. In three months all headache had disappeared, the distant vision of the left eye, both at near and distant range, equaling that of the right eye.

Case 2.—Miss M., aged 20, had the following defect:

R.+sph. 0.75⊃+cyl. 0.75 ax. 1.25°=20/50.
L.+sph. 0.50⊃+cyl. 3.50 ax. 1.15°=20/100.

Careful instruction as to ocular gymnastics has improved the vision in four months to R. 20/20; L. 20/50+.

Case 3.—Mrs. R., aged 51, had the following refractive error:

R. 20/30+sph. 0.37=20/20.
L. 10/200+sph. 3.00⊃+cyl. 1.00 ax. 90°=20/200.

With the left eye the patient could read only the large-print "Scripture leaflets" hung in rooms—the only thing I could get for her of sufficiently large-sized letters with which to exercise the eye. One year later, after more or less exercise of this eye alone, she was able to read Jaeger 12, slowly.

Case 4.—Miss R., aged 25, under homatropin was found to have the following error of refraction:

R.—sph. 3.00⊃—cyl. 1.50 ax. 150°=20/70+.
L.—sph. 7.00⊃—cyl. 0.50 ax. 180°=20/70.

Eight months later the vision was: R. 20/20; L. 20/40.

Case 5.—Mrs. K., aged 45, had 20/40 vision in the right eye, with a compound myopic astigmatism twice as great in this eye as in the left. There were 6 degrees of exophoria. Proper correction of all ametropia and insufficiency with monocular exercise relieved the life-long sick-headache, etc., and in 5 months the vision of the left was brought to the normal.

Case 6.—Miss S., 35 years of age, had had frontal headaches all her life, and, with much near-work ptosis of the left lid. Refraction was:

R.—sph. 1.50⊃+cyl. 5.00 ax. 105°=20/70.
L.+cyl. 1.25 ax. 80°=20/20.

Five months later, after the monocular course of gymnastics, all headaches and ptosis had disappeared, and the vision of the right eye was 20/20.

Case 7.—Mr. P., 25 years of age, was found to have the following refraction:

R.—sph. 0.25⊃+cyl. 1.00 ax. 125°=20/20.
L.+sph. 0.75⊃+cyl. 3.00 ax. 180°=20/70.

He has been wearing a plane glass. After mydriasis had passed off he could, with proper correction, barely read with the defective eye Jaeger 10. Three months later he read Jaeger 4, with ease.

Case 8.—Miss M., 46 years of age, gave a history of a lifetime of sick-headaches, once or twice a week with anorexia, anemia, etc. She was wearing:

R.—sph. 3.00⊃—cyl. 2.25 ax. 180°.
L.+sph. 0.75.

This had been given her for constant use, although her age was 46, and she was employed at writing all day. I found that her refraction was:

R.—sph. 2.50⊃—cyl. 5.00 ax. 165°=20/70.
L.+sph. 0.37=20/20.

Hyperphoria of 3°.

A few months after correcting the ametropia, presbyopia, and hyperphoria, with monocular exercise of the right, the vision in that eye had improved to 20/40, and all the reflex symptoms mentioned had disappeared.

Case 9.—A little girl of 9 was greatly afflicted with night-terrors, somnambulism, headache, anorexia, nervousness, etc. Her refraction was as follows:

R.+sph. 0.75⊃+cyl. 5.00 ax. 100°=20/70.
L.+sph. 1.00⊃+cyl. 5.00 ax. 85°=20/100.

The blinder was ordered for the right eye, with daily exercise of the left alone in reading large print toy-books, in playing, etc. The right eye soon recovered a normal acuity, but it took nearly a year of watchful care and exercise to bring the eye to 20/20?

Case 10.—Mrs. A. has had constant frontal headache for the past 5 years, culminating in paroxysms of sick-headache every few days. When a girl at school she had "numb spells," etc. I found:

R.+sph. 3.50⊃+cyl. 1.00° ax. 150°=20/100.
L.+sph. 1.00⊃+cyl. 0.75° ax. 150°=20/20.

Persistent exercise with the blinder brought progressive increase of visual acuteness and power. The reading ability descended through all the sizes of letters from Jaeger 18 to Jaeger 8, and from ability to hold the image for only a few seconds, until now, seven months since beginning, she can read ordinary print with the right eye for a half-hour, and distant vision at the last visit was 20/70, with improvement still in progress. The headache, anorexia, ill-health, etc., have entirely disappeared.

Case 11.—A girl of 10 years of age, anemic, with ocular and forehead-pain, was refracted on April 16, 1902:

R. 20/70+sph. 1.00⊃+cyl. 0.25 ax. 90°=20/30.
L. 20/200+sph. 1.25⊃+cyl. 0.37 ax. 90°=20/70.

With the prescribed exercise of the left eye, the vision in six months had reached 20/30, and will doubtless soon be equal to that of the other.

Case 12.—A lad of 17, with a high degree of compound hyperopic astigmatism in the right, and 20/70 vision, while the left had perfect vision, and a low degree of the same refractive error. The blinder treatment has brought vision in the right eye to 20/20? in six months.

Case 13.—This case is an instructive one. A gentleman of 46 years has had severe ocular trouble and headache all his life, but for the past 12 years these and other symptoms have been excessive, and he has reason, if he but knew it, to preach some useful lessons to ophthalmic specialists. One of these gentlemen, who prides himself on prescribing by ophthalmoscopic examination alone, fitted him with glasses 12 years ago, but with the most heroic endeavor he could not wear them. Vertigo was at this time, and for 6 years, so pronounced that it was a source of daily wretchedness. Then came the turn of the graduated tenotomist, but the vertigo was worse and mental confusion became so great that pronounced cerebral disease was diagnosed by physicians. He feared insanity, and was so haunted by suicidal mania that he had to take daily precautions to obviate the thought and the circumstances that might lead to its execution. This went on for years. A firm will has kept the upper hand through all these years. The patient describes his symptoms as "panic-feelings and palpitation of the brain," with extreme nervousness and nausea. The headache has been less of late. Lastly, a famous oculist told him to go to an optician and get whatever glasses should be given to him there. These he has been wearing for reading—what little he can do. They are simple plus spherical 3.00 D. lenses, the same for each eye! After hours of careful work I find his true refraction to be:

R.+sph. 2.00⊃+cyl. 2.00 ax. 40°=20/40.
L.+sph. 1.50⊃+cyl. 1.00 ax. 90°=20/30+.

With the right eye alone he can hold an image of Jaeger 10 but a second or two, the letters then "jump" and fade.

When one thinks of a lifetime during which the poor eyes and the cerebral centers of the last case, for example, have struggled and begged for a bit of intelligent help; when one analyzes the peculiar defect that would not let either eye renounce vision; when one considers the fact that a strong healthy masculine will has fought against this frightful evil, and preserved its defective mechanism so well; or what would have been the result in a woman—when one ponders over these and many such related things, one is pained with sympathy, and indignant at the failure to help.

The age of the patient, of course, has a great deal to do with the success of treatment in all these cases, and one fact stands out with clearness; the younger the age at which the treatment is begun the better. Reaction is prompt in the young, and every added year of failure, and wrench, and wreck, makes the task ever more difficult.

I have had something like fifty of these cases, and many had previously passed through the hands of others unbenefited. It would, therefore, appear that the duty to "fight for a bad eye" is at present not at all recognized. Every such case is pathetic with dumb pleading for a simple bit of help that it should be at once our highest duty and privilege to give. Moreover, to prevent disease is even greater than to cure it, and if taken early in life in no branch of medicine is intelligent prevention of intolerable evil so possible and so beautifully resultful as in painstaking and skilled refraction-work.

To the foregoing suggestions I might add that in my practice I have not found it necessary or to any considerable extent helpful to add the use of stereoscopes, the reflecting stereoscope, the amblyoscope or the heteroscope,[5] bar reading, the fusion tubes of Priestley Smith, etc. The stereoscope may be of temporary use in some cases. Some of these contrivances I have not even tried. The reflecting stereoscope of Worth is the most promising and I judge may be of great service in some cases. Most of them, however, are unnecessary when errors of refraction are accurately corrected, and when the thorough-going methods suggested are carried out with real seriousness, patience and insistence. I do not use the pad or bandage, as the sound eye should be kept open; a silk or velvet blinder is advisable attached to the spectacle lens or frame, of an extent sufficient to prevent vision with the covered eye.

5. THE TREATMENT OF PHYSIOLOGICALLY CURABLE STRABISMUS.

This treatment is by means of prophylaxis, by correction of the ametropia that prevents binocular vision, by reinstating the normal coördinating innervation of the muscles and by the treatment of amblyopia. The crux of the matter is in the decision as to the cases which are curable by nonoperative methods, and those in which operation must be performed. The fatal desire to get to work at tendon-tinkering leads to such horrible expressions as these: "After a trial by glasses we must, if unsuccessful by this method, advise operation." "Nonoperative treatment may be persisted in for a month, or even two months." "In a small proportion of cases cure may be brought about without operation." Instead of which I would advise that several years be tried, a dozen or a score perhaps. Even the mutilations and deformities produced by tenotomomania may be corrected in time by sane medical methods.

6. THE TREATMENT OF ALTERNATING STRABISMUS.

When taken early enough in life alternating strabismus may be cured by the methods described, but there are varieties of the affection which it is not very desirable to cure, especially if the habit is chronic. Many cases of alternating strabismus have binocular vision, but it is not synchronous. I remember, for instance, a few such cases in adults, with simple myopia in one eye and approximate emmetropia or simple hyperopia in the other, the myopic eye, of course, used alone for near, the hyperopic having lost accommodation and used only for distance. As 99 per cent. of cases are astigmatic, it is extremely rare to find that no glasses are required, and, moreover, presbyopia will surely demand them later. In other cases although not anisometropic and without the power of synchronous fusion the mind has caught the trick of psychic suppression of one image and preserved the acuity of both eyes with only slight and not deforming strabismus by alternation of fixation. No operation would have any good effect.

7. THE TREATMENT OF ANOMALOUS CASES.

Despite our rich nomenclature there are cases that are not accurately or fully nameable or describable, except individually. Dr. Charles Herman Thomas[6] describes three cases of strabismus with anomalous diplopia, caused by an original and acquired fixation spot in each eye, the normal macula being used in monocular fixation, the other in binocular fixation. I have had similar cases, one in particular, in which choroiditis had destroyed the macular region in one eye and a new macula produced a pseudostrabismus. In another two new maculas had been formed, and there was great increase of visual acuity with two heavy prisms, bases up, which deflected the cones of light more accurately upon the two new maculas. I have noted among my cases a number of instances of what might be called intermittent strabismus, the strabismic eye becoming simply heterophoric for awhile and again becoming strabismic without apparent cause. These in chronic cases in adults seem to differ from those common in children, in which strabismus comes on only with great excitement, loss of health or great fatigue. Thus in Case 5552 the left eye has been convergent from about the age of about one year. At 9 I found each eye still retained 20/40 vision. For a year there was intermittent strabismus, but within one year there was recovery of 20/20 vision in each eye and constant binocular vision.

There is a puzzling class of cases which show divergent strabismus, or the convergent variety, with one set of tests but the reverse defect with another. The eye, e. g., is highly divergent under cover, but as highly convergent with the Maddox rod or prism diplopia. Case 6316, for example, had this anomaly. She could use both eyes together or either separately and at will. There were no symptoms.

Another class of most troublesome cases is characterized by strabismus only in certain positions of the head. In Case 6,605 the patient had nausea in looking downward owing to paresis of the inferior rectus of one eye. There was hyperphoria of 5 degrees in looking at the book or sewing in the lap; 3°B.D.L. in the near lenses of her bifocals gave complete relief.

Among suggestive anomalies may be noticed the case of my friend, Dr. Pyle,[7] in which a blunt hook had torn through the lower rectus of one eye, the conjunctiva, etc., of the entire structures beneath the eyeball from the inner to the outer canthus, part of the inferior rectus being found upon the hook after the accident. Perfect binocular motion and vision were finally reinstated. In another unreported case Dr. Pyle tells me that a patient continued to use prism-gymnastics for exophoria beyond orders, and when she returned her exophoria of 12 degrees had become esophoria of 20 degrees. This change of 32 degrees merely by adduction exercises will doubtless not be believed by the makers of surgical instruments. But it is well to curb the ambitions of these commercial gentlemen or otherwise they might be advocating new and wondrous tenotomes for rectifying an erratic motion of the earth by operation on the muscles of the solar system!

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[5] For the formation of such barbarisms as these two words the etymologic criminal should have a unique punishment, and in this present world! An ophthalmoscope is an instrument with which to view the eye. An *amblyoscope* can mean nothing else than an instrument for viewing a dull or blunt (thing).—The father of the word may have meant an instrument for viewing amblyopia or dulled vision. How would it look? The *heteroscope*, of course, means an instrument for viewing another or different (thing). Some one should invent a *psychoamblyoscope*, an instrument for observing psychic amblyopia.

[6] Am. Oph. Soc., 1894.

[7] Journal A. M. A., March 9, 1901.

Cases have sometimes shown a positive strabismus of one kind upon one day which disappeared or was reversed at another time; others with perfect vision of both eyes and yet with a suppression of the image of the nonfixing strabismic eye. I have had at least one instance, Case 4,983, of what I have called "strabismus hemianopsia," i. e., the loss of function of one-half of the retina due to strabismus, with consequent displacement of the macula, which so accurately simulated hemianopsia of cerebral origin that without knowledge of the history the perimetric chart would be held as evidence of it. The hemianopsia disappeared by training in one year. Such cases as these teach us many lessons whether our therapeutics aid much or little. The treatment of these anomalous cases will, of course, depend on the unclassifiable conditions present plus the intelligence and conscience of the physician. No rules can be drawn. The formation of new maculas is itself an illustration of what nature will do and seek to do if we will but give her time and freedom from our impertinence, to work out her slow, wise and beautiful methods of repair.

8. THE TREATMENT OF INCURABLE CASES.

Incurable cases are of three classes: 1, The paralytic, which are beyond the scope of these notes; 2, the chronic cases, due to the neglect of parents or of the "ophthalmic surgeon," the period of possible cure having passed and nature's long appeal for help ignored, with the result that the eye is ruined. A fairly accurate law in these cases is that the preserved remnants of vision and innervation will show signs of reaction and revivification to natural treatment so long as the eye may be straightened non-surgically. When the eye can be of no use nature will not seek to straighten it. Moreover, as a rule, she will not allow it to be straightened even by the best surgical means. My advice to such patients is to leave such an eye untouched. Usually, despite whatever advice may be given, the patient has fully and wisely determined not to risk operation for purely cosmetic reasons. Such an eye is a fitting memorial of professional neglect, which as a standing negative advertisement we should, indeed, seek to hide under a blinder. 3. The worst and most hopeless of incurable cases of strabismus are those which are the result of unsuccessful operation for heterophoria or strabismus. There are many such, most of them coming down from the past generation when unart for unart's sake was the rule, and the result too often being increased hideousness for the sake of deformity. Many of these wretched people must have been operated upon for heterophoria, because they have irritating diplopia, the result of unextinguished vision in the deviating eye. Those of the latter class may sometimes be helped or cured by nonsurgical methods, but their bitterness of heart usually makes them refuse all further offers of help. Surgery they will not listen to, and I have yet to see operation for the cure of the evil results of surgical operation do any good. It usually aggravates the evil, just as cure of heterophoria is vastly more difficult after there has been operation. As an instance, Case 6267 was operated upon for strabismus at 4 and again at 7. When the patient came to me some years later there was diplopia, headache, dizziness, etc. Fusion of the images was impossible. (The impossibility of fusion of the images when brought by testing closely to each other indicates that nature will never consent to their fusion. It is better in such cases to let them be wide apart. The closer their approximation without fusion the greater the danger of accident to the patient.) By effort either eye could be used for near or for distance. The right was preferably used for near and the left for distant vision. Correction of refraction was the only therapeutic measure possible, but this gave great relief of the subjective symptoms. Case 4,077 had been operated upon for hyperphoria without correction of the astigmatism—a sin which the god of medicine will never forgive. The operation, as is so common, was successful at first, but there soon reappeared 10° of esophoria and 7° of hypertropia. Gymnastic training and partial correction of the hypertropia extinguished the lateral imbalance and reduced the vertical to 3° with binocular vision and satisfaction.

I do not deny that cases of strabismus have been "cured" by operation, nor do I deny that the vast majority of such operations are "successful." I am unfortunate in that I have seen but one case—the eye, however, absolutely blind.

What could induce an observant man to suppose that partial cutting of the tendon of an ocular muscle would permanently lengthen it? Is it so even with a cord and suspended weight? Is there a scrap of evidence that cut from its attachment on the globe a tendon will grow upon a new unabraded, uninjured surface? The history of every case I have watched shows the slow but certain reattachment at the old insertion, and finally the same length and strength and tension as in the original condition. All healing processes demonstrate their aim to be to replace the old condition as near as possible after the traumatism, even to the regrowth of excised tissue. The immediate effect of the tenotomy has nothing to do with the matter. The sole question is, what is the condition a year afterward?

The fallacy as to "cure" and "success" usually lies in the choice of the time when these estimates are made. If immediately after the operation the words have no meaning. The patient must use his eyes in after years and all his life. If the cause of the strabismus was not in the lengths or strengths or insertions of the muscles, but if these lengths, strengths and insertions were the results of other causes, surgery was absurd and there was no cure. Hence, in a few months or a year all the old troubles return after needless surgical intervention.

Eight or ten years ago I also was in "Arcadia," the surgical Arcadia, where I undertook operation for heterophoria and strabismus. But I found that my awkwardness, or perhaps some other causes, soon made me sure that I was in another, a far warmer and a much less happy country. I supposed for years that my failures were due to my poor surgery, for I had heard all my Arcadian surgical brethren vowing they were most successful and happy. Then the results of their work began to appear in my office, and I again moved back into Arcadia. But it was an individual Arcadia, and for awhile I was very lonely. With the exception of the one case I have mentioned I have never seen the results of an operation in heterophoria or strabismus of which I should be proud to say, *I did it!* If there were any real and permanent effect, there was either immobility, the stare of remonstrance or of death, the proptosis or exophthalmos, the wabbling and lack of control, or the fixed strabismus—one or several of these symptoms combined—and these are things that make one turn attention to physiologic rather than surgical methods, to prevention rather than cure. As to treatment, when these patients do ask for help we dare promise them nothing, and we shall in the worse cases usually end by advising a ground glass lens that will as little as possible attract the attention of others and hide from view an unseeing or an unsightly eye.

DISCUSSION

ON PAPERS OF DRS. GARDINER, AYRES, JACKSON AND GOULD.[*]

Dr. S. D. Risley, Philadelphia—I have a profound conviction that if I had twenty minutes instead of ten I should leave this subject in the minds of my hearers very much where I find it. If it were not so serious a subject to our patients who are suffering, I should feel like treating it humorously.

When I compare the papers of Drs. Ayres and Gardiner with those of Drs. Gould and Savage, presented last year at St. Paul, I can but think that the experience of another year has taught us all to pursue a more conservative course, and that, as years go by, we will all become more and more conservative when it comes to operation on the ocular muscles. I wish some member of the Section might gather up the threads of clinical experience and, Newton like, establish some law from all these truths and half truths which come to us in our daily experience, so that we might know just what to do in every case. I have no hope, however, that we shall ever be able to establish a law that will guide us in the abnormalities of ocular balance. Each case must be studied carefully and separately, and treated with the utmost care and judgment. Here as in all other situations in medicine the doctor who succeeds best is he who has the widest knowledge and best judgment.

I am sure that there is a large group of patients whose conditions are well illustrated in Dr. Ayres' paper, in which the ocular symptoms are reflexes of other conditions. I have seen many illustrations. For example: Some years ago a lady came to my office with some error of refraction and I prescribed glasses for her without relieving her symptoms. I then found a constantly varying anomaly of ocular balance; esophoria at one visit and hyperphoria at the next, never twice the same. I then sent her for an examination for pelvic trouble, and her physician wrote me that there was nothing wrong. Her employment required her to stand many hours daily. I then requested him to support her uterus with a pessary for a few days. He did so and all her ocular symptoms promptly disappeared and she was able to abandon the glasses, except for reading. The case of this woman is an illustration of one class of patients supporting the contention of Dr. Ayres' paper, but, on the other hand, I believe that a large number of our patients have absolute abnormalities of ocular balance in no sense reflex in character, but due to local anatomical conditions. It is rare, indeed, to find a model skull. Distortions in form are very frequent and of such a character as to modify the shape of the bony orbit. Now, any circumstance which will change the shape, size and inclination of the walls, or the floor and roof of the orbit is likely not only to influence the shape of the eyeball, giving rise to astigmatism with asymmetrical meridians, hypermetropia, etc., but also to influence the length and direction, the origin and insertion of one or more of the complex group of extraocular muscles. I believe this to be the cause of a large group of the absolute abnormalities of ocular balance. To reduce them in their almost infinite variety to any semblance of a law seems to me a well-nigh hopeless task. On the contrary, added study but serves to increase our comprehension of their complexity.

Dr. G. C. Savage, Nashville, Tenn.—In connection with Dr. Gould's paper allow me to say that there are two requisites in all surgery: first, there must be a correct understanding of the condition; and, second, there must be a clear head to guide and a steady hand to execute. When these two conditions are met, surgery is not the despair of medicine. Again, if Dr. Gould's argument that the length, size and insertion of muscles play no part in the causation of either heterotropia or heterophoria, it would be as impossible for a tenotomy to do harm as he claims it impossible for any operation on a muscle to do good; for a tenotomy only sets the muscle insertion back, and the nervous impulse could soon make this muscle do as good work as if it had never been cut.

With these preliminary remarks I shall proceed to the discussion of the principles controlling both the operative and non-operative treatment of squint. There are two muscle states: first, the non-nervous tension; second, the nervous tension. The non-nervous tension, or tonicity, of a muscle is determined by its origin, its course, its size, its length, and its attachment to the globe. The nervous tension, or contractility, of a muscle is the power that leads or turns the eye. If the non-nervous tension of a pair of muscles, or of two pairs that are associated, is ideal, the nervous tension of these muscles will be normal. Every true muscle error, be it squint or heterophoria, is an error of tonicity or non-nervous tension, and the muscle itself should be treated, when possible, by non-surgical means, otherwise by well-directed surgery. The object of all treatment of the ocular muscles is to so regulate their non-nervous tension that there may be an ideal response to a normal nerve impulse. A pseudo-muscle error is due to abnormal nervous tension of one muscle of a pair. It is always caused by a focal error and is always cured by lenses that correct the focal error.

Dr. Nelson M. Black, Milwaukee—In regard to the non-operative treatment of squint I wish to speak of a method advanced by one of our English brethren, Mr. Claud Worth of London; as to its treatment from the etiological standpoint that the potential causative factor is the non-development of the fusion center. His method of treatment is at first entirely non-operative, the exact degree of deviation is first obtained, then refraction under mydriasis, after placing the proper glasses before the child's eyes, binocular vision is accomplished and the fusion center exercised and stimulated by an ingenious instrument which he has devised, called the amblyoscope. The instrument is made up of two halves composed of a long and short tube joined at an angle of 120 degrees, with a mirror at the cord subtending this angle; at the distal end of the long tube is placed an object glass, at the proximal end of the short tube is a lens whose focal distance is equal to the length of the joined tubes; the two halves are hinged together at the proximal end of the short tubes; it can be adjusted for a convergence of 60 degrees, and a divergence of 30. A description of the instrument will be found in The Journal A. M. A., Vol. XXXVIII, No. 21, p. 1363. He places the child before the amblyoscope and explains what is to be seen, for instance, a bird and cage, and tells the child he is to get the bird in the cage. The bird is placed in the tube before the fixing eye and the cage before the deviating eye; as the child looks into the instrument he sees only the bird. By that time the child has probably lost the picture before the fixing eye and the intensity of illumination is changed until both objects are seen, the two halves of the instrument then moved back and fourth until the child has the bird in the cage. The exercise stimulates the fusion center while the child is squinting. Worth finds in the majority of cases that the divergence or convergence of the visual axes greatly lessens after a few exercises with the amblyoscope. During the intervals between the use of the instrument he stimulates the vision of the deviating eye to bring back fixation by instilling a mydriatic in the fixing eye which precludes its near use. He instills a mydriatic each morning for two weeks in the fixing eye, measures the degrees of deviation, and then continues with the amblyoscope until he gets parallelism of the visual axes or until such time as there is no decrease in the degree of deviation, and then resorts to operative measures. The fusion center all this time having been stimulated and exercised as well as binocular vision having been accomplished by means of the amblyoscope. The desire for fusion will be so great that the patient on having the visual axes brought approximately parallel will fuse immediately and the visual axes held parallel by this developed fusion faculty.

Dr. Mark D. Stevenson, Akron, Ohio—In ametropia, correcting lenses are chiefly demanded because of the more or less constant use of the eyes for close work. The static and dynamic refraction may be determined, but, unfortunately, this is not so true of the static and dynamic condition of the ocular muscles. The eye used for close work must not only accommodate, but also turn toward its fellow, and this latter fact necessitates a careful study of the ocular muscles for near work which has so often been neglected, studying only their condition for the distance.

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[*] The papers of Drs. Gardiner and Ayres appeared in The Journal, October 25.

I believe the greatest factor in the production of squint to be a lack of fusion power, due to an untrained and poorly developed cortical-center, which controls binocular vision, and that the various other causes usually mentioned are contributary to it, and are generally operative if at all, because of the presence of this defect. Alternating squint where the fusion power must be so very defective, since other conditions are favorable to binocular vision, is necessarily the most difficult to cure. When the fusion sense is so weak that it will not control two otherwise good eyes, with good vision, etc., it will certainly be difficult to develop. I have used Mr. Worth's amblyoscope with marked success in training the fusion faculty, and have watched the splendid results achieved by its inventor in London.

The refraction of the eyes should be determined if the patient's age be eight or nine months or over, and if strong correcting lenses are needed they should be worn even at that early age. If the patient be too young to train the fusion sense, or for operation, it is well to preserve the vision of the worse eye (which is otherwise often lost from disuse) by instilling a weak solution of atropin in the better eye, two weeks in each month. With the correcting lenses the better eye will be used for the distant, and often the worse eye for near objects, thus preserving the sight of each until something more can be done. It is bad theory and worse practice to put atropin in the squinting eye, thus making the already poor vision of that eye worse, and inviting amblyopia exanopsia, thus certainly insuring a poor result.

Dr. Francis Valk, New York City—The papers remind me of the days when I first began the study of medicine; when Professor Thompson told us that pneumonia was a local disease and some one else said it was a systemic disease, and when we asked the Professor about it he would say, "Well, you will have to study it up for yourselves." And so it is with this problem, we must each study it according to the cases that come to our office or in our clinics.

I hardly think Dr. Gould would condemn a pretty little girl to go on for years with one eye turned in with the hope that some day by exercise it would turn out again. It would not be fair.

I think Dr. Risley has struck the keynote of the whole thing and that is that there are anatomic conditions that produce squint and that we must look to their correction as well as to the correction of other conditions. I have seen convergent squint coming on at, or immediately after, birth. Should we commence to treat them when they are only one week old? Follow them until they get to be four or five years old and you will find one eye amblyopic and the other good. On the other hand, we may have a child born with one eye amblyopic and yet it never squints. In these other cases where you find amblyopia without squint you find the power of the externi exactly the same as the interni. Suppose we have then a case with congenital amblyopia, you will waste time and money if you attempt to cure it by any other means than operation.

And as to the operation: Dr. Gould has based his ideas on tenotomy, but tenotomies are going out of fashion; the first thing we do is to strengthen the weak muscle, and if you strengthen it first and then do a carefully performed tenotomy you will cure the squint. Strengthen the externi by shortening and then do a tenotomy on the interni. We find another class of cases in which vision is active in one eye and down to 20/70 or 20/50 in the other, with squint. If you can strengthen your field of vision by putting on glasses you may cure it; if you can not, then strengthen your externi and do a tenotomy on the interni, if needed.

Dr. Risley—It seems to me that much of the confusion which clusters about the subject of ocular imbalance arises because we lose sight of primary conditions. We should remember that binocular vision is largely a matter of experience. The young infant cries when the light is turned out and is content when it is turned on again. It does not know which way to look for the light, and learns to do so only by experience. So it is with binocular vision. We learn it as we do other things in life. I believe that in a great number of cases in which comfortable binocular vision is not acquired is because of anatomic abnormalities in the skull or from faulty attachment of the muscles to the globe. A certain number of children are born who become strabismic because of these faulty anatomic conditions, and under no circumstances can they have parallel visual axes and binocular vision. Others, I am convinced, have binocular vision even without parallel visual axes, having acquired a factitious macula which they use in the converging eye instead of the normally placed macula. In other cases the strabismus is due to an absolute scotoma in the deviating eye. We must remember that binocular vision is a matter of experience and when not attained there must be some underlying cause for failure which should be diligently sought for. I have no doubt that many imprudent tenotomies have been done, but this does not justify the statement that we should never operate. That many cases can be cured without operation is a matter of daily experience, but, on the other hand, there is a certain number of patients with defective ocular balance due to congenital anatomic anomalies, or to macular defects for whom binocular single vision can not be secured with or without operation. Experience has taught us that some of the most brilliant results follow properly performed tenotomies. I could bring forward the carefully recorded history of many cases which have been lifted from a state of invalidism to health and comfort by tenotomy of an ocular muscle after all other means had been exhausted. The cases alluded to by Dr. Gould are cases of failure. He simply does not see the cases which have been relieved. It is only the failures which wander about from one consulting room to another.

Dr. Gardiner, in closing—When Dr. Gould was in the operative Arcadia I was in the non-operative Arcadia for the treatment of strabismus. At the meeting of this Section in Newport in 1889, I read a paper on the non-operative treatment of strabismus convergens and there gave the result of 25 cases of non-operative treatment. I agree with the Doctor to this extent, take the baby young enough and good results can be had. Three cases that were then reported as under observation I had come to my office during the last two or three days and am glad to be able to report them now after thirteen years. Two of them have binocular vision, one 2 degrees, and the other 4 degrees of esophoria; both perfectly comfortable. The other improved, but had to be tenotomized, and is still under observation. I have had this patient under observation since she was three years old. There are certainly cases where nothing will do good but an operation and where an operation will do good.

Dr. Ayres, in closing—In regard to the new-born babies there is generally a wabbling of the eyes noticed in all of them for the first three or four weeks and sometimes one is very much afraid that they are going to be cross-eyed. But as the child grows this unsteadiness of the ocular muscles disappears.

Dr. Jackson, in closing—It is very easy to speak of the elastic tension of the muscle and the tension under innervation; and when you have the two terms to put them up as two separate and distinct things, and talk of them that way. But if you take the same muscles from day to day, and week to week, these are not sharply separated. The elasticity of a given day may depend on the innervation of preceding weeks. We see an example of that in the blacksmith's arm. It is true of the eye muscles as well as those of the general body. They can vary in their length and in their strength. We have evidence that the influence of the muscles on the eyeball is dependent on the nervous impulse that comes to them. I do not refer simply to the condition of nerve centers, but to the innervation of the muscles in connection with the use of the eyes. As regards the anatomic variations, I think there are cases where this influences the development of strabismus, but such cases are exceptional. I think that there is no more reason to suppose that an excessive action of the internal rectus muscle goes along with some abnormality in the shape of the bones of the orbit, than to suppose that the thickness of the muscle on the blacksmith's arm depends on the shape of his humerus.

New Instruments.

NEW INSTRUMENTS FOR THE REMOVAL OF THE FAUCIAL TONSILS.

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PROFESSOR OF NOSE AND THROAT, CHICAGO POLICLINIC.
CHICAGO.

The methods of tonsillotomy that have been in use in the past having proven unsatisfactory and incomplete, it seems an opportune time to present, not a new operation, but a new method of operation. We are fast coming to realize that enlarged or diseased conditions of the tonsil are a detriment to the economy and nearly all of us agree at the present time that, when a diseased condition of a gland exists, the entire gland should be extirpated.

For the past five or six years it has been my custom to remove the entire tonsil when diseased or chronically enlarged. For this purpose I have devised instruments which make the operation complete. It is almost universally conceded that if any procedure is adopted at all, it is to the end of destroying the gland, whether this be by a shrinking process, by cautery or by operative means. For the first method little is claimed and the only time it is used is when the patient or his friends interfere with our plans. The second method is divided into a variety of procedures, from puncture of the crypts and even burning between the crypts, to complete removal of the gland itself and at times part of the anterior pillar. This form of treatment has some very warm advocates and some very happy results have been attained by its use. Some also prefer the use of the scalpel and think they obtain fine results by the complete dissection of the gland. All of these operations have friends, and it is not with any idea to tear down, but rather with the thought of giving one more method to consider, that I have sought to bring to notice a scissors, which seem, after considerable use, to be superior to all the former methods, both in the completeness of the operation and the ease with which the operation is performed, both for the patient and the surgeon.

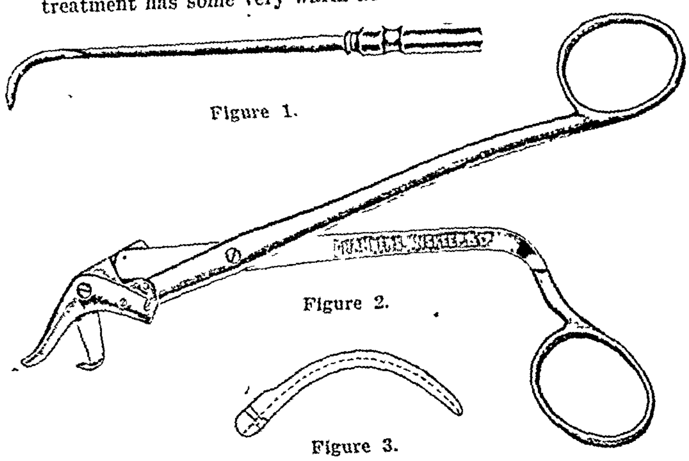

Figure 1.

Figure 2.

Figure 3.

Fig. 1.—The curved knife. Fig. 2.—The scissors. Fig. 3 shows the curvature of the cutting edge and is full size.

I prepare the patient in the usual way, using applications of cocain alternately with full strength solution of adrenalin, sometimes injecting a weak solution of cocain into the tonsil itself, or if the use of cocain is not desired, the tissue may be frozen with ethyl chlorid spray. General anesthesia is seldom required. The pillars of the palate are then separated from the tonsil with the knife shown in Figure 1. This knife is simply a double-edged bistoury curved on the flat and with a dull point. The radius of the curve is 1 cm., and the cutting edge is 2 cm. in length. The instrument in all is 28 cm. long and has an octagonal handle so it may be turned in the fingers easily. It is double-edged, so it serves for either tonsil. In separating the pillars care should be exercised not to destroy the muscular layers of the pillar. After the tonsil is thus separated from the palatal pillars, it is grasped with a fixation forceps and the gland removed with the scissors, cutting from above downward. Great care must be taken to remove all the gland. Unless the operator be observing, a part of the upper portion may be missed. If such be the case it can easily be removed by a subsequent snip of the scissors.

It is not so rapid an operation as tonsillotomy performed by the tonsillotome, but it is far superior, as in the case of operation by the tonsillotome the entire gland can not possibly be removed. In the latter, the operator can remove all or part as he may desire. The right tonsil should be removed while holding the scissors in the left hand, but if the operator be not ambidexterous, it can be done while they are held in the left, although in this position he must work over the grasping forceps. Figure 2 shows the scissors. They are made in two sizes, for adult and children, and are made rights and lefts.

The advantages of the scissors are:

1. They allow of the removal of every part of the gland, or any portion of it, as the operator may choose.
2. They are bent on the long axis so that when fitted into place the handles are horizontal.
3. They are made with a double joint so that the cutting edges can be thrown wide apart, with little movement of the handles, allowing the operation being done in cases where the jaws can not be widely separated.
4. The blades are curved enough to make it unnecessary to turn the scissors on their long axis, in cutting the lower portion of the gland.
5. They enable you to remove small diseased tonsils which are impossible to remove with the tonsillotome.
6. You are enabled to remove the entire gland with no injury to the pillars.
7. There is not the soreness following the operation that is so common in the use of the galvano-cautery, and ear complications are not so liable to occur.

100 State Street.

A NEEDLE EXTRACTOR.

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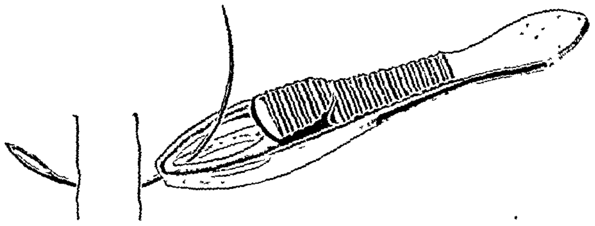
HOUSE PHYSICIAN, PASSAVANT MEMORIAL HOSPITAL.
CHICAGO.

The difficulty of extracting a needle after it has been inserted into dense tissues, especially if threaded with heavy suture material, is one with which every surgeon is familiar. Inasmuch as it is often impossible to let go with the needle holder before getting a hold of the point of the needle with something, one mostly resorts to extract the needle with a pair of hemostatic forceps, or if it is a fine needle a pair of ordinary tissue forceps is used. Neither of these instruments are well adapted for the purpose; the hemostatics are unhandy, and often crush the needle, while the tissue forceps slip and nearly always spoil the point of the needle.



In offering the present needle extractor I have added no distinctly new instrument to the already great number, but have merely tried to modify a pair of heavy tissue forceps to the special use of a needle extractor.

The instrument is a pair of heavy tissue forceps, 4½ inches long, having a large eyehole in the side of each blade through which the point of the needle passes. The tips of the forceps are lined with soft corrugated copper, and on the sides of the blades are placed thumb supporters in order that the instrument may be held more firmly.

Rapid Granulation of Wounds Exposed to Sunlight.—O. Bernhard has been making a practice lately of exposing slowly-healing wounds to intense sunlight. Granulation is visibly promoted and the healing of tuberculous cavities after evacuation has been favorably influenced.—*Corr. f. Schw. Aerz.*

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THE HUXLEY LECTURE ON THE RELATION OF RECENT WORK IN IMMUNITY TO PATHOLOGY.

There are many things connected with the last Huxley lecture at the Charing Cross Hospital Medical School in London, Oct. 1, 1902,[1] that must interest greatly medical men in this country, as well as scientific men in general. As a tribute of admiration "for the great army of scientific workers on the other side of the Atlantic" Professor Welch of Baltimore was invited to deliver the lecture this year, and certainly no better choice could have been made, either from the point of representation of American investigators or from the point of essential and inherent fitness. In his graceful introduction to the lecture Professor Welch speaks modestly of himself as a soldier in the ranks, but his colleagues and his pupils long ago elevated him to the position of acknowledged leadership in scientific medicine in this country; and they are proud to know that called on to follow such great men as Sir Michael Foster, Virchow and Lord Lister, Professor Welch as the fourth Huxley lecturer proved himself fully equal to the occasion.

The Huxley lectureship was founded to commemorate the fact that Huxley received his medical education at the Charing Cross Hospital Medical School, and it is provided that the lecture shall relate to "recent advances in science and their bearing on medicine and surgery." Accordingly, Professor Welch selected as his theme "Recent Studies in Immunity, with Special Reference to Their Bearing on Pathology," and a more timely and better selection it seems could hardly have been made. The subject-matter of the address is presented in so able and lucid manner, with so much originality and learning, that we unhesitatingly pronounce the address a most valuable addition to the literature of scientific medicine, valuable alike to the general reader and the scientific investigator; to the first especially because of its clear restatement in a well-drawn historical perspective of the essential facts in our recently acquired knowledge of the specific properties of the cells and fluids of the body in health and disease, the theories concerning antitoxic action, bacteriolysis, cytolysis, agglutination and specific precipitation; and to the second because of its suggestiveness and its able co-ordination of the new knowledge with the old in pathology and bacteriology, thus drawing the pathologist and bacteriologist closer together, and especially because of the interesting extension in a new direction of Ehrlich's well-known theory in regard to the production and action of specific antitoxins and serums of various kinds.

It will be remembered that when the soluble bacterial toxins of the bacillus of diphtheria and of the bacillus of tetanus were discovered the hopes ran high that in this way would be explained the action of all pathogenic bacteria, but soon these hopes met with disappointment. With this disappointment also fell to the ground the hope that specific antitoxic serums could be produced for all or most of the bacterial diseases, just as in the case of diphtheria or tetanus. The conditions did not prove to be so simple as at first thought, and it is a matter of general regret that so far it has not proved possible to make available for successful use in general medical practice the much more complicated bacteriolytic serums that experiments have shown may be produced in the laboratory against so important infectious agents as the typhoid bacillus, the pneumococcus, the staphylococci, the streptococci, etc. Unquestionably this failure must be ascribed, at least in large part, to our imperfect understanding of the mechanisms by which these organisms produce their pathogenic effects. We know really but little of the source, nature and mode of production of many of the bacterial toxins that we have reason to believe are at work in the production of the diseases in mind. The theory that all the toxic substances result from the disintegration of dead bacteria hardly suffices, and it is in order to better explain problems of this sort that Professor Welch advances a new hypothesis of bacteriogenic cytotoxins produced by stimuli from the cells of the host (somatogenic stimuli). This is a transferred application, so to speak, of the theory of cytotoxins, from the host to the bacterium, and it does seem to be a simple and natural inference from the recent work in these lines. By the same sort of mechanisms both organisms—the host and the bacteria—under the mutual stimuli of their cells produce substances that under the complicated conditions present become antagonistic in so far as they tend to destroy or injure the cells from which the stimuli in the form of atom complexes are derived.

It is recalled that familiar cytotoxins, like the hemolysins and bacteriolysins, are in reality made up of two substances, the intermediate body, which is the specific element produced by the injection of foreign cells into an animal, and the preëxisting complement, which is the actually toxic element. The intermediate body joins the complement with the foreign cell, which started the reaction, thus completing its destruction. If reactions like these are produced in the host's cells, why not also in the case of bacteria and other parasites exposed to analogous conditions? "Expressed in the terms of Ehrlich's side-chain theory, certain substances of the host of cellular origin, assimilable by the parasites through the possession of haptophore groups with the proper affinities, become anchored to the receptors of the parasitic cell, which, if not too much damaged, is thereby stimulated to the overproduction of like receptors; these excessive receptors of the parasite, if cast off into the fluids and cells of the host, there constitute intermediate bodies or amboceptors with special affinities for those cellular constituents or derivatives of the host which led to their production, and for others which possess in whole or in part identical receptors. Provided the host is supplied also with the appropriate complements, there result cytotoxins with special affinities for certain definite cells or substances of cellular origin in the host. . . . Either the parasite or the host may provide the complements."

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[1] British Medical Journal, Oct 11, 1902.

According to this hypothesis the infectious processes may be conceived as immunizing contests, both host and parasite endeavoring to make themselves immune against each other, the outcome depending on the relative proportion and distribution of bacterial cytotoxins and host's cytotoxins. We are told that experiments giving facts in favor of this hypothesis will be published later. It will be seen that this conception permits us to understand how it may be possible for infecting bacteria to produce many special toxins for the various cells in the body, toxins that might be absent in the cultures because of the absence of special stimuli. Considerable support for this view is derived from recent studies by the new methods of snake venoms. It has been shown by Flexner and Noguchi that the toxic actions of these venoms depend on the presence of intermediary bodies with affinities for different cells, the complements being contained, not in the venom, but in the cells and fluids of the animal acted on. Recently Preston Kyes brings evidence that in the case of cobra venom the necessary complement in hemolysis may be found within the red cells of certain animals (endocomplement), and furthermore, that lecithin may act as a complement and complete the hemolytic potency of the venom. These experiments show that our serum and cells contain substances that may be turned against our own cells by the intervention of foreign intermediary bodies, and this certainly strengthens the plausibility of Welch's idea that such intermediary bodies may come from bacteria. And we already have been made acquainted with hemolysins and other special toxins of bacterial origin, such as the bacterial hemolysins that are readily demonstrable in test-tube experiments, and which it lies so near at hand to hold responsible for the secondary anemias of many infectious diseases. Examples are already at hand of bacteria that exert their hemolytic properties during life, e. g., streptococcus. We can see the rich field of possibilities for fruitful investigations under the stimulus of these fascinating conceptions of cytotoxic reactions of the most various kinds.

Among other instances showing the direct bearing of studies in problems connected with immunity on pathology, Welch cites the probable action of hemagglutinins of bacterial origin in causing thrombi of agglutinated red corpuscles. Analogous agglutination of white corpuscles is also quite probable. And he urges further search for bacterial cytotoxins for other cells of the body than blood corpuscles, believing that in this direction will be found better explanations for many lesions, e. g., those of typhoid fever, than we are now in a position to advance. While the chief stress of the lecture is laid on the toxins of bacterial origin, suggestive references are made also to animal cytotoxins, to isolysins, to autocytotoxins, and to the rich fruits borne by the studies in immunity in the field most directly concerned, namely, the resistance and predisposition to disease. The desirability of studying the condition of the blood serum as to its content of intermediary bodies and complements in health and disease is emphasized.

THE LUNG COMPLICATIONS OF APPENDICITIS.

Probably every surgeon of much experience has seen several cases of severe post-operative pneumonia, and possibly of death, following operation for appendicitis. A more careful observation of the condition of the lungs after all operations would no doubt show a larger proportion of cases in which there is some inflammation of the lungs after these operations than is generally supposed. The symptoms are so slight in many cases that they might be readily overlooked, and recovery is little if any delayed.

Sonnenburg[1] of Berlin, who has become well known to American surgeons as one of the few advocates of the early operative treatment of appendicitis in Germany, has recently published a very interesting paper on this subject. In 1,000 cases of appendicitis operated on in private and hospital practice, he finds lung complications following operation in 5 per cent. of all cases. In 740 cases operated on at the Moabit Hospital in Berlin, he found 7 cases of pleurisy and 1 case of bronchitis, all followed by recovery. In 5 cases of pneumonia 3 of the patients recovered. The lung complication followed in 12 cases which were operated on during the attack and in 1 case operated on in the interval. Although it would seem at first sight that the dangers of this complication are much less in cases operated on in the interval, and Sonnenburg's statistics in hospital practice seem to indicate this, his experience in his private clinic is quite the reverse. Out of 260 cases operated on in his private sanitarium lung complications were observed in 13 cases, 9 of whom were operated on in the interval and 4 during the attack.

As to the cause of these important complications, various suggestions have been made. Since Gussenbauer's paper, published a number of years ago, called attention to the inflammatory conditions of the lungs which frequently follow strangulated hernia and showed the apparently direct connection between the thrombosis which occurs in the small vessels in the strangulated part and lung embolus, numerous writers have been inclined to attribute most of these pneumonias to embolus. Although a large number of cases may be due to embolus, there are undoubtedly cases in which other etiologic factors are of still greater importance. The advocates of chloroform anesthesia are inclined to call all of these cases ether pneumonias, or ether bronchitis, but it is significant that the inflammation seldom follows directly after the administration of the anesthetic, but usually several days later, which should not be the case if the inflammation resulted directly from the effect of the anesthetic. Exposure of the patient in poorly heated operating rooms may give rise to chilling of parts of the body not accustomed to exposure and inflammatory diseases of the respiratory tract. This is no doubt a factor of greater importance than is generally believed. The fact that patients are kept flat on their backs to lessen the liability to post-operative hernia, not only after operations for appendicitis, but after all abdominal operations, makes these inflammatory conditions much more frequent after abdominal operations. Those who believe that thrombosis most frequently results from infection will perhaps attribute to the infectious condition itself a part of the danger of causing these conditions.

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[1] Archiv für klinische Chirurgie, 1902, lxviii, 468.

No doubt more careful attention to details which suggest themselves from a consideration of the causes of lung inflammations after operation would considerably reduce the number of such complications which frequently add so much to the anxiety of the surgeon after operation.

BEHRING'S RECENT WORK ON TUBERCULOSIS.

There is much of fundamental interest in the recent publication on "Tuberculosis" from Behring's Institute in Marburg,[1] in which are reported the results of the investigations of the last five years by Behring and his assistants Römer and Ruppel. Indeed, if we mistake not, the solutions are here given of some of the fundamental problems in tuberculosis. The most important of these is undoubtedly the one concerning immunity to tuberculosis. Behring shows that by repeated injections of cattle with cultures of human tubercle bacilli that are comparatively harmless for cattle, there is produced a complete immunity to virulent bovine tubercle bacilli, bacilli so virulent that 2½ milligrams injected intravenously causes death in two to three weeks from acute miliary tuberculosis of the lungs. Behring designates this method of immunization as "jennerization." Animals immunized in this way withstand well the intraocular injection of virulent tuberculous material which so injected in untreated animals causes rapid destruction of the globe.

Behring passed a human tubercle bacillus through rabbits and goats and found that the originally nearly harmless bacillus now had acquired as great a virulence for cattle as any of the cultures of bovine bacilli. Though originally much influenced by Koch's dualistic theory of the tubercle bacillus, Behring now abandons that teaching, and he now holds that the bovine and human bacilli merely show labile differences in virulence and consequently well may be alternately infective for both man and cattle. The fact that cultures of human bacilli by "jennerization" produce such a solid immunity to highly virulent bacilli of bovine origin certainly shows a close relationship between the bacilli from the two sources.

Should Behring's work stand then it will form a landmark in the history of the study of tuberculosis second in importance to no other work in this field since the discovery of the bacillus of tuberculosis. The establishment of a solid, unquestioned immunity to tuberculosis in cattle necessarily means much, both from the economic point of view and also from the standpoint of the limitations of the spread of the disease. Furthermore, this demonstration is rich in therapeutic possibilities, and the settlement of the much-disputed question of the relationship of human and bovine bacilli also marks a great step in advance.

THE PSYCHOLOGIC MOMENT IN SURGERY.

Text-books on surgery give, as a rule, only a brief mention of the importance of the mental state of the subject at the time of operation. Perhaps it is considered too self-evident to require emphasizing—a matter that no competent surgeon will neglect. This may be so to some extent, but it is also possible that young surgeons, and perhaps older ones, do not always give the mental condition of the patient the attention it deserves and attribute to other factors the misadventures that are really due to this.

Dr. O. B. Will, in a recently published article,[1] gives especial attention to this point which, as he says, is theoretically important, but practically often overlooked, and illustrates its importance with cases from his own experience. To quote his words, it is his confident belief that "while nothing in operative environment, technic and skill is usually overlooked, the facts will bear me out in the assertion that in four cases out of five in general operative work the influential circumstances and conditional disturbances of the patient are not inventoried with half the zeal, skill and perfection bestowed on the instruments and other accessories to be employed." While this has reference not only to the psychologic condition, but to all others aside from the surgical preparation and technic, it is this particular point that is probably most neglected. Few operators would care, unless compelled by the emergency, to perform serious operations where the physical symptoms clearly indicated a failure or decided weakness of vital resistance, but it is much less certain that like account will be taken of purely psychic states that may nevertheless affect the outcome. The closest study of every nervous and mental function would not seem to be amiss when an operation that involves any strain on the patient's endurance and vital resistance is undertaken.

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[1] Beitr. z. exp. Therapie, Heft 2.

[1] Peoria Medical Journal, October, 1902.

These suggestions seem almost commonplace in their self-evident verity, but according to Dr. Will they are too often overlooked or unheeded. He, however, goes farther and counsels giving heed even to human weaknesses and superstitions. If Friday, the phase of the moon, the thirteenth day of the month, or whatever else is a bugbear it is well to regard it when possible. The surgeon can not rightly take any unnecessary risks, and even these seemingly ridiculous handicaps may affect his success and the patient's future welfare. There are few of us that can be insured against these influences; superstitions, presentiments, etc., are likely to beset any of us, especially in conditions of bodily weakness and disease, and they may have a very appreciable effect in any case of special stress. There are many untoward happenings in surgery credited to postoperative complications that are very possibly due to neglect of the psychic factor as much as to any pathologic cause. It prepares the *locus minoris resistentiæ*, and without this infection or other morbid processes would be harmless. In these days we are having in the various popular delusions, perhaps more than was formerly the case, numerous object lessons of the influence of the mind over the body. The medical profession has never been without warning of or opportunity to learn these truths; they are old in medical literature, but we have perhaps neglected them too much in surgery as well as in medicine. The psychologic moment is as important in one as in the other, and in both as in any and every other phase or enterprise of human activities.

DOUKHOBOR FANATICISM.

A curious story comes from Assiniboia in the Canadian northwest. A few years ago a considerable number of Russian quakers, or doukhobors as they are called, settled there and have thus far prospered. Prosperity, however, seems to have been too much and too sudden for them, after their Russian persecutions; they are, as a Canadian correspondent puts it, ill at ease without trouble of some sort. Therefore, under the influence of a newly arrived Russian prophet, and some say from that of Tolstoi's works, a considerable number of doukhobors have arrived at the conclusion that it is wrong not only to deprive any animals of their life or freedom, but also to appropriate to their own use their services and products. They accordingly have turned their animals loose, commending them to Providence, and made bonfires of their woolen clothing, leather shoes and whatever else they had about them that was taken from the animal kingdom. As they were already vegetarians they only had to modify their diet by giving up milk products, eggs, etc., that they had formerly used, and as their crops have been good and their barns and cellars are generally well stocked, it is not likely they will suffer except in the lack of warm woolen clothing during the coming winter. Like most enthusiasts they are full of missionary zeal and propose a propaganda of their new peculiar doctrines. It will be a matter of some interest, should this craze become permanent, to observe what the effect of such a mode of living will be in a climate like that of Manitoba or Assiniboia. So far we believe, no northern race, or for that matter any other race, has ever been as purely vegetarian as these doukhobors propose to be, and the outcome of this extreme experiment in zoöphily will be worth watching. It is most probable, however, that it will not be carried out consistently for a sufficient length of time to produce any effect on the race.

EARLY MEDICINE IN MARYLAND.

Among the interesting historical papers on the early history of medicine in this country, published in the Bulletin of the Johns Hopkins Hospital, not the least interesting is that by Dr. Eugene Cordell on the Transactions of the Harford Medical Society in the August and September issue. It gives in its extracts and comments on the same, with its historical data attached, what must be in many respects a good idea of the medical practice in Maryland at the close of the eighteenth century. In some respect it is a closer picture of the average of practice at that date than can be gained from the periodical publications of the same period—which are practically limited to one—the Medical Repository—since in the latter a stricter editorial scrutiny has probably given only a selected or blue-penciled and revised version of the medical contributions of the time. The treatment of those days was heroic, venesection a routine practice, even as much as seven pints taken from a patient with pneumonia in less than five days. With the lancet, "backed by his mercury, his cathartics and his blisters," the physician of those days was ready for anything pathologic that came his way. Perhaps it was fortunate that our ancestors in that period had perforce to leave themselves in Nature's hands as much as they did, though it would be incorrect to assume that individual common sense did not at times overrule the dominant therapeutic notions of the day. It is interesting to notice, also, the extravagant, as it seems to us, reverence to authority, especially that of Rush, on the part of these early physicians, which is well illustrated in the extracts given by Dr. Cordell. Rush was a great man, but judging from these transactions we are far from estimating him as highly as did his contemporaries. It is perhaps a little unfair to judge the practice of those days too strictly from the case histories then thought noteworthy enough to report to a rural medical association. Nevertheless a perusal of Dr. Cordell's paper makes one a little complacent over the fact that we live in these times. It may be that a hundred years hence some searcher of medical antiquities will find as much for self-satisfaction over the progress that has been made since our own benighted period.

CRITICISM OF MEDICAL LEGISLATION AND ORGANIZATION.

In a small book,[1] read widely enough to demand several recent editions, which is devoted to the expounding of a thorough-going scientific rationalism, we find in a chapter headed "The Victory of Medical Science," a short criticism of medical organization. It seems particularly worthy of notice because we have heard almost the same words uttered by one or two very successful men in the regular profession. The author thinks that the greatest danger which confronts medical science at the beginning of the twentieth century comes from its being "infected with the monopolistic spirit of the times," and thus attempting to form a medical trust and to secure the protection of its interests by the state. The desire for laws against unlicensed practitioners seems violent, intolerant and thoroughly medieval to this author. He says: "In the long run, medical science has nothing to fear from the unlicensed practitioner. The fittest will survive, and the protection of class interests by legislation is always followed by a reaction, which is most injurious to those who have been favored." The peculiar feature of this argument, especially as coming from the pen of a writer who constantly preaches social betterment, is its utter neglect of the standpoint of the public. Even were it necessarily true, which is highly improbable under the complicated conditions of human life, that the professional man of highest scientific attainment is the best fitted to survive, yet why should the public be a blind party to the struggle for survival and in the meantime suffer unadvised from the impositions of incompetency and charlatanism? We all recognize that the proper requirements for the practice of modern medicine are so far apart from the understanding of the non-scientifically educated public that it is quite useless to expect widespread ability to judge between competency and cheek or carelessness. And how far the impositions of charlatans really extend we may easily see in the advertising columns of our newspapers. As to medical organization on the present liberal scientific basis and the legislative attempt to restrict the field of medical practice by some gauge of competency—it is obvious that both of these proceedings contribute in many important ways far more to the welfare of the public than to that of the members of the profession.

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[1] The Crime of Credulity. H. N. Casson, Fifth edition, p. 186.

Medical News.

ILLINOIS.

Asylum Asks Appropriations.—Trustees of the Illinois Western Hospital for the Insane at Watertown, will petition the next session of the legislature for appropriations aggregating $450,000. The chief item in the new schedule is an appropriation for a ward building, to cost $200,000.

Returned from Philippines.—Dr. George A. Zeller, late surgeon U. S. V., returned to Peoria, October 23, and will at once take charge of the Hospital for Incurable Insane, Bartonville. He has resigned from the United States service.——Dr. Harry R. Lemen, U. S. V., Upper Alton, has arrived at San Francisco, on a short leave of absence.

The Blacklist in Moline.—Rules to govern physicians and the blacklist were adopted at a recent meeting of the medical staff of the Moline City Hospital. Any physician calling on a blacklisted person without his fee in advance will be liable to a forfeit of $25, and failure to pay the forfeit will result in the suspension of the physician from the society. The rule is to be suspended in cases of emergency. The Rock Island physicians are following the same course and will work with the Moline doctors for mutual protection.

Per Capita Cost at State Institutions.—The net cost per capita at the various state institutions for the three months ended September 30 was as follows: Illinois Northern Hospital for the Insane, Elgin, $37.48; Illinois Eastern Hospital for the Insane, Kankakee, $34.31; Illinois Central Hospital for the Insane, Jacksonville, $31.40; Illinois Southern Hospital for the Insane, Anna, $35.92; Illinois Western Hospital for the Insane, Watertown, $33.13; Hospital for the Criminal Insane, Chester, $60.70; Illinois Hospital for the Incurable Insane, Bartonsville, $35.14, and Illinois Charitable Eye and Ear Infirmary, Chicago, $56.22.

Chicago.

Lorenz Goes West.—Professor Lorenz and his suite departed for the Pacific Coast, October 26.

Personal.—Dr. Louis E. Schmidt has been appointed clinical professor of genito-urinary surgery of Northwestern University Medical School.

Diphtheria threatens to be more prevalent and fatal this fall than at any time since its treatment by antitoxin was begun in Chicago some seven years ago. Twenty deaths were reported from this cause last week, as against 12 for the corresponding week last year.

Bequests to Hospitals.—By the will of Siegfried H. Kirchberger the Alexian Brothers' Hospital, Chicago Lying-In Hospital, Visiting Nurses' Association and the National Jewish Hospital for Consumptives at Denver, each receives $1,000. For a memorial room in the Michael Reese Hospital, to be conducted by the United Hebrew Charities, $3,000 is provided.

Chicago Pasteur Institute.—Since the opening of the institute in July, 1900, 1,538 patients have been treated, 745 of whom came from Illinois, 166 from Ohio and 112 from Iowa. One thousand three hundred and eighty-two were bitten by rabid dogs, 9 by hydrophobic human beings and the remainder by various animals. The deaths reported are 7, a mortality of 0.45 per cent.

The Week's Mortality.—The deaths from all causes for the week ended October 25 were 483, 38 more than in the preceding week and 41 more than in the corresponding week of 1901, the respective annual death rates per 1,000 being 13.83, 12.73 and 13.10. Of infants under one year 77 died and 106 individuals over 60. Diseases of the lungs caused 96 deaths, heart disease 43, nervous diseases 36 and violence 43.

Higher Standard for Nurses Demanded.—Strict laws that will establish a standard for trained nurses and prevent the graduating of inexperienced young women are being urged by Chicago physicians. Several institutions in Chicago now issue diplomas to students after four or six months' study. Two of these institutions are correspondence schools and are instructing nurses in all parts of the middle west.

Unlicensed Physician Fined.—When the case of Anthony Lalla, an employe of a medical institute, charged with practicing medicine without a license, was called in the Criminal Court, October 18, the defense entered a plea of nolle contendere. A fine of $100 and costs, amounting to $19, was imposed.——Mary S. Deitrich was found guilty of practicing medicine without a license October 20 and was fined $100 and costs.

Prevention of Germ Diseases.—The Department of Health says that it realizes its duty to prevent disease to the full extent of its power and knowledge. It knows that the inhalation of formaldehyd gas will prevent a very large proportion of cases of the diseases which now threaten the public health. For a few cents any druggist will furnish a half-ounce metal ointment box, packed with absorbent cotton and the cotton wet with formalin. The formalin box should be carried during the day and put under the pillow at night. At the onset of coughing, sneezing, running of the eyes and nose or other premonitory symptoms of having "caught cold," remove the cover from the box and inhale the vapor or gas through the nostrils and mouth alternately for two or three minutes. Be careful not to inhale too vigorously at first. Frequently a single use will cut short the symptoms, but it may be repeated without harm as often as necessary during the day and night. It is confidently believed that thousands of cases of the contagious and infectious air-borne diseases, with a large percentage of deaths, could be prevented by this simple and inexpensive method.

INDIANA.

Five Physicians Indicted.—In the alleged grave-robbing cases at Indianapolis 25 individuals have been indicted by the grand jury, five of whom are physicians.

Huntington Hospital Open.—The Huntington City Hospital opened to receive patients October 10. Dr. Charles L. Wright is attending surgeon and Dr. Helen K. McIlvaine resident physician.

Professional Headquarters.—Physicians, dentists and lawyers of Muncie have decided to erect a building to be devoted entirely to office purposes. The building proposed with lot will cost about $35,000.

Personal.—Dr. Graylord M. Leslie, Fort Wayne, has been compelled to go to Colorado for his health.——Dr. George M. Young, Evansville, for fifteen years chief of staff at St. Mary's Hospital, has accepted a similar position in a hospital in Toledo, Ohio.

MARYLAND.

Hospital for Cecil County.—Drs. Howard Bratton, Charles M. Ellis and John H. Jamar, Elkton, have been appointed by a meeting of those interested in the matter, a committee to devise means to establish a hospital in Cecil County.

Physician Wins.—A suit against Dr. Edwin B. Claybrook, Cumberland, in which malpractice was alleged by a young woman, who was operated on for a cystic tumor and $5000 damages asked, was non prossed in court, October 23.

Baltimore.

The Week's Deaths and Diseases.—There were 166 deaths for the week ended October 25, 7 being from typhoid fever, 2 from diphtheria, and 12 from pneumonia. Of new cases there were reported, from diphtheria, 42; scarlet fever, 19; typhoid fever, 37, and measles, 29.

Personal.—Dr. William H. Welch returned from England, October 20.——Dr. Clapham Pennington has returned from Europe.——Dr. Hubert Richardson has resigned his position as chemist at Mt. Hope Retreat.——Dr. William Simon has resigned the chair of chemistry at the Maryland College of Pharmacy.——Dr. James M. Craighill has been elected president of the University of Maryland Medical Society for the ensuing year, and Dr. I. E. Atkinson, president of the Medical and Surgical Section of the Medical and Chirurgical Faculty.——Dr. William H. Baltzell, who has spent the last two years in Paris, has returned to Baltimore.

Etiology of Cancer.—Dr. John C. Hemmeter, experimenting on the etiology of cancer, has obtained a fluid representing the cancer juice freed from possible organisms and epithelial elements. Injecting this in dogs in whom artificial gastric ulcers had previously been produced, he succeeded in four cases of 10 in converting the simple ulcer into a malignant growth. This result followed only, however, when the material was obtained from the dog; the injection of a similar fluid prepared from a human carcinoma was without result. He has been engaged in these researches three years, but he has limited himself to experiments on dogs and the stomach. He has been led to favor the anti-parasitic view of the etiology.

NEW YORK.

Cornerstone Laid.—The cornerstone of the new Herkimer Emergency Hospital was laid to-day. The principal address was made by Dr. Willis E. Ford, Utica. The building and site have been donated by Mr. Levi A. Lawton.

Personal.—Dr. Eugene M. Draper, after 28 years of practice in Ilion, has been obliged to move to California on account of his wife's health.——Dr. Robert C. Woodman has been appointed first assistant physician at the Middletown State Hospital.

Eddyites Spread Diphtheria.—There is considerable excitement in White Plains over the discovery that a child attending one of the schools was ill with diphtheria and received no medical attendance. This child died, and then the coroner discovered that the mother, a brother and a sister were all sick with the same disease. Two or three cases of diphtheria have already developed, which the physicians have traced to this first family, and indignation is high because the health of the community has thus been jeopardized at the whim of these Eddyites. Although the house is quarantined, the "healer" has been allowed to pass in and out daily. The coroner held an inquest, and held the parents of the dead child and the "healer," charging them, under the penal code, with manslaughter.

New York City.

Lorenz Will Come.—It is announced that Dr. Adolph Lorenz will reach New York City, November 5, and will operate at the Hospital for Ruptured and Crippled.

Suture of Heart.—A woman stabbed in the heart by her drunken husband was taken to Bellevue Hospital. It was found that the knife had made a wound in the left ventricle. This was at once closed with six sutures. Although she had rallied sufficiently the next morning to tell how she had been attacked, she eventually died from shock.

OHIO.

New Fraternity Chapter.—A new chapter of the Alpha Kappa Kappa medical fraternity was instituted October 2, at the Ohio Medical University, Columbus. It is to be known as the Pi Chapter.

Typhoid at New Castle.—New Castle has had 350 cases of typhoid fever and 40 deaths from that disease since the first of January, and last month's reports show that it is rapidly increasing.

Board of Health.—The new municipal code which has just been passed by the Ohio legislature, provides for a board of health for Cincinnati, to consist of five members, to be appointed by the mayor.

Physician Vindicated.—The personal injury case of Earl Herminghuisen against Dr. John G. Keller, Toledo, to recover $10,000 for alleged malpractice, was dismissed, October 15, immediately after a jury had been empaneled. The costs were assessed on the plaintiff.

Divine Healer Arrested.—At the instance of the State Board of Medical Examination and Registration, an aged disciple of Schlatter in Cincinnati was arrested, October 17, for practicing medicine without a license. The accused was released in $500 bonds. She maintains that she does not profess to be a doctor and, therefore, does not come under the state regulations covering the practice of medicine.

The medical college situation in Cincinnati has been somewhat altered this fall by the decision of the Cincinnati College of Medicine and Surgery to close its doors. Many of the students registered at this college last year have now registered at the two remaining colleges, while a few have gone elsewhere. The total registration at the Miami Medical College and at the Ohio Medical College remains about the same as last year.

To Study Smallpox.—Dr. W. T. Howard, Jr., professor of pathology at Western Reserve Medical College, who has been employed as expert bacteriologist, has been authorized by the city council of Cleveland to spend $4,000 in an effort to discover the nature, progress and spread of the smallpox bacteria. He will erect a small laboratory where, with two trained experts in bacteriology, the work will be pursued under his personal supervision.

Quarantined Physician Released.—On the statement of State Health Officer Probst that a local board of health had no right to hold a physician in quarantine, the sanitary committee of the Sandusky board has decided to release Dr. William H. Busch, health officer, who volunteered to go to the hospital and care for Miss Winifred McGushin, who was taken ill with smallpox here and has now recovered. The committee first ordered that Dr. Busch be retained for seventeen days in quarantine, but he has now been released.

Infectious and Contagious Diseases.—The Bureau of Infectious and Contagious Diseases, Cincinnati, reports for the week ending October 24, 59 cases, with 20 deaths, distributed as follows: Diphtheria, 18 cases, with 4 deaths; scarlet fever, 13 cases, with no deaths; typhoid fever, 15 cases, with 6 deaths; smallpox, 4 cases, with no deaths, and a scattering of measles, chicken-pox, mumps, and whooping cough. The number of typhoid cases are steadily diminishing, but the health officer still urges the public to use none but boiled water.

Personal.—Dr. J. C. Oliver, dean and professor of surgery in the Miami Medical College, Cincinnati, who for the past few weeks has been seriously sick with pneumonia, is rapidly convalescing.——Dr. George Stockton, assistant physician to the Columbus State Hospital, has been elected superintendent, in place of Dr. E. G. Carpenter, deceased. Dr. Stockton was appointed assistant physician in 1879, but had to leave on account of politics in 1890; he returned, however, in 1892 and has been there ever since.——Dr. George S. Buttemiller, Cincinnati, has been appointed resident physician of the Speers Memorial Hospital, Dayton, Ky.

PENNSYLVANIA.

Personal.—Dr. J. Pandora Simpson, New Castle, sailed from New York, October 18, for India, where she is to take charge of a large hospital under the auspices of the United Presbyterian Church.

Smallpox in Ehrenfeld.—The State Board of Health sent a representative to Ehrenfeld to investigate the smallpox situation. He reports that 34 cases of genuine smallpox exist in 38 houses in the borough; that the real nature of the disease has not for some time been appreciated, the general opinion being that it was chicken-pox and not smallpox.

Reorganization of Hospital.—An adjourned meeting of physicians and laymen interested in the organization of the Beaver County General Hospital was held in Rochester, October 6. Drs. Walter A. Rose and Guy S. Shugert, Rochester, and Dr. John J. Allen, Monaca, were elected directors; Dr. Allen was elected vice-president, and Dr. Shugert treasurer.

Association Acquires Hospital.—The McKees Rocks Hospital was purchased, October 8, by the McKees Rocks Medical Association, from Dr. Samuel M. Black. The purchase of the hospital, which was organized three years ago as a private institution by Dr. Black, will make it a public institution, controlled by the medical association, which will appoint the hospital staff from among its own members quarterly.

Philadelphia.

Health Report.—The official health report for the week ended October 25 showed a marked increase in smallpox and typhoid fever. Of the former 12 new cases were reported, as against 2 for the previous week; of the latter 90 cases, as against 49 the previous week.

Clinic for Poor Consumptives.—Through the generosity of Henry Phipps of New York, Philadelphia is to have a clinic for the treatment of poor consumptives. He has given $5,000 for the purpose of securing suitable quarters for a clinic, and says he will give money every year to support the institution.

Lorenz in Philadelphia.—A committee of the trustees of Jefferson Medical College has invited Dr. Adolph Lorenz to come to Philadelphia as a guest of the institution. It is hoped that he will operate in the clinic of Dr. H. Augustus Wilson, professor of orthopedic surgery in the college, and president of the American Orthopedic Association.

Dinner to Drs. Keen and Wood.—It is the purpose of a number of the friends of Dr. William W. Keen and Dr. Horatio C. Wood to tender them a dinner, November 6, to celebrate their safe return to this country after a long absence. The committee is composed of Drs. William Osler, Henry W. Stelwagon, Francis X. Dercum, John H. Musser, George E. de Schweinitz, J. Chalmers DaCosta, Alfred Stengel, and Hobart Amory Hare, chairman.

Personal.—Dr. William M. Capp, by reason of illness, is unable to serve as assistant chief resident physician of the Philadelphia Hospital to which he had been appointed temporarily, pending the selection of a successor to Dr. Pfahler. ——Dr. Frederick A. Packard is very ill with typhoid fever at the Pennsylvania Hospital.——Dr. Aloysius O. J. Kelly is now editor of *International Clinics*, succeeding Dr. Henry W. Cattell.——Dr. Frederick H. Milliken has returned from a European tour.——Commander Robert E. Peary, U. S. Navy, the Arctic explorer, is a patient in the private hospital of Dr. W. W. Keen, where he underwent a slight operation necessitated by freezing his feet a few years ago.

GENERAL.

Should Lepers Marry?—An interesting discussion has arisen in Hawaiian affairs. Attorney-General Dole is quoted as saying concerning the marriage of lepers: "This is the only country where leprosy is segregated. I would be loath to take the last bit of comfort from these people by breaking up their family ties. The children of leprous parents are not always tainted, as I understand it, and I think that it would be too harsh a measure to take away the little happiness that remains to them." Many opinions pro and con are being expressed. Word from Hawaii states that Dr. W. O. Smith, who was for years the president of the board of health, said that during the last thirty years the average of girls born to leprous parents, showing the taint after birth, had been less than 1 per cent.

Bubonic Plague and Fish.—U. S. Consul Robert M. McWade has noticed the frequent occurrence of bubonic plague among fish-eating people, and suggests that the facts may be worth investigating. Surgeon-General Wyman of the Marine-Hospital Service states, in connection with Consul McWade's report, that if bubonic plague is prevalent among the inhabitants of towns and cities along the water front and among fish-eating people, it is due only to the exposure undergone by them, and by their unsanitary mode of living. Some time ago a report came from Japan that plague in the human race was caused by germs received in the eating of fish. The Japanese specialist Nickaladi made a thorough investigation, and after many experiments stated that the plague reported in fish families was in no way similar to bubonic plague, and in no way could germs from the fish cause plague in the human race.

CANADA.

Appointment.—Dr. Wilfrid Derome has been appointed to the medical staff of the Notre Dame Hospital, Montreal, to replace Dr. Grenier, who has commenced practice at Winocki, Vt.

Liquid Air Plant at McGill.—A new liquid air plant has been recently installed in the physics building of McGill University. It is the gift of Sir William Macdonald for research work.

Vancouver Hospital.—Funds are being raised for the new general hospital for the city of Vancouver, B. C., and the requests for subscriptions are meeting with a ready response. A marine ward is proposed for the sailors of the many ships entering that harbor.

Royal Columbian Hospital Bequest.—This hospital, at New Westminster, B. C., has been given $5,000 by a donor whose name is not given.——Dr. F. L. Stanier has resigned from the position of medical superintendent. Dr. George W. Boggs is in charge until the provincial government appoints a successor.

Ontario's Health During September.—The number of deaths from typhoid fever in Ontario during September was 52, as against 26 in the month of August. The deaths from whooping cough were 9, while in August they were 21. The other deaths for the month were as follows: Scarlatina, 11; diphtheria, 25; consumption, 167.

Montreal Hospitals Might Build Contagious Wings.—Montreal appears to be no further ahead than it was a year ago with regard to the erection of a new Contagious Diseases Hospital. The proposition that the hospitals of the city, especially the General and Notre Dame, build wings for the reception of patients suffering from contagious or infectious diseases, seems to be meeting with a good deal of favor. Now that the Royal Victoria Hospital has recently erected a wing for the treatment of contagious diseases, there seems to be no valid reason why the other two hospitals should not follow suit; and arrangements could be made with the city government, it is urged, whereby a certain sum could be handed annually to these institutions for this purpose.

Diseased Meats and Adulterated Condiments in Montreal.—The announcement by Dr. Laberge, M.H.O., Montreal, that he can buy strawberry jam in that city which has neither strawberries nor sugar in it; that there are catsups which make excellent dyes, and candies which might profitably be used to paint fences with, shows a condition of adulteration of food products in that city and the carrying on of an abominable business which is probably not excelled on the continent. The hygienic committee has been inquiring into the matter with the result that the medical health officer has been asked to write the American Government, supplying the names and brands of adulterated catsups made by American firms and sold in Canada. In addition it was decided to call the attention of the Quebec Government to the enormous quantities of adulterated goods sold in the Province of Quebec contrary to the law.

Quebec Protestant Hospital for the Insane.—The Protestant Hospital for the Insane at Verdun, Que., has just completed and opened a fine new addition to its buildings. This hospital received its first patient July 15, 1890; and at the close of that year there were 139 private and public patients in residence. By December, 1894, the population had grown to 250 patients. In 1896 another addition was erected with accommodation for 100 patients; and the total population at the end of 1897 was 299. At the close of 1898 the patients totaled 323, and at the end of December, 1899, the number had increased to 362. At the close of 1901 this number had advanced to 411, so a new "East House" had to be constructed. Now the population of the institution totals 501. The staff of the Hospital at present is as follows: Government inspectors, Drs. A. L. de Martigney, C. P. Chevrefils and J. J. E. Woods. Consulting Staff—Surgeon, Dr. G. E. Armstrong; physician, Dr. F. G. Finley; gynecologist, Dr. F. A. L. Lockhart; pathologist, Dr. Andrew McPhail, all of Montreal. Officers of the Institution—Superintendent, Dr. T. J. W. Burgess; assistants, Drs. J. V. Anglin and C. A. Porteus.

FOREIGN.

Pope's Physician Ill.—Dr. Lapponi, private physician of the pope, has appendicitis.

Rothschild's Gift to Hospital.—Baron Nathaniel Rothschild gave $200,000, October 24, to the Poliklinik Hospital, Vienna.

Measles in Kamchatka.—A cable from St. Petersburg announces an epidemic of measles in Kamchatka. Ten thousand persons have died of the disease, and the population of some country villages has been nearly wiped out.

The Antituberculosis League in Uruguay is only two months old and yet it already has more than 700 members inscribed, each paying an annual fee of about $3. Donations have been received from banks and numerous national societies, and the city authorities of Montevideo have made an appropriation for it. Pamphlets are being distributed, circulars posted in workshops, etc., a special dispensary is to be organized and an organ founded if possible.

International Convention for Unification of Heroic Remedies.—The scope and description of this convention were given in The Journal for October 18, p. 998. Forty-one heroic remedies were placed on the list, for which a standard strength of 10 per cent. was agreed on by the delegates from 19 governments. The convention adopted three resolutions. One advocated the exclusive use of Latin terms for the more powerful drugs. The second condemned the practice of dispensing any heroic remedy in the form of a medicinal wine, and recommended that the more powerful drugs should be made up in the form of a 10 per cent. tincture by percolation with 70 per cent. alcohol, and the fluid extracts in a 100 per cent. strength. The third resolution was in favor of the universal adoption of a standard dropper whose external diameter should be 3 mm. at the tip, that is, a dropper which at a temperature of 15 C. (59 F.) allows the passage of 20 drops of distilled water, a weight of 1 gm. The heroic remedies included in the list are aconite, belladonna, colchicum, digitalis, ipecac, hyoscyamus, nux vomica, opium with laudanum and Dover's powder, strophanthus, ergot, diluted hydrocyanic acid (this contains 1 per cent. of the acid in France and 10 per cent. according to certain other pharmacopeias), cherry-laurel water, bitter almond water, phenoli solutio (to be made with 2 per cent.), sodium arseniate (to be made with the crystallized salt representing 36.85 per cent. of the arsenic acid), Fowler's solution (to be made with 1 per cent. of arsenious acid), syrup of ferrous iodid (to be made with 5 per cent. of anhydrous ferrous iodid), tincture of cantharides, tincture of iodin (to be made with 95 per cent. alcohol), tincture of lobelia, cocain hydrochlorate (the anhydrous salt), mercurial ointment (to be made with 30 per cent.) and wine of antimony (to be made with .4 per cent. of the emetic). A committee was appointed to determine the most appropriate Latin term for the various drugs. A number are known by several Latin names. Further particulars will be found in the *Semaine Méd.* of October 8 and 15.

LONDON LETTER.

Lectures at the Medical Graduates' College and Polyclinic.

A somewhat novel scheme has been inaugurated at the Medical Graduates' College and Polyclinic. It is proposed to have a long, possibly interminable course of lectures on medicine, surgery and the specialties in which the lecturer shall take a subject to which he has given special attention. Thus it will constitute a sort of *viva voce* encyclopedia of which new and amended editions will constantly appear. The lectures will be systematic as distinct from clinical and good summaries of up-to-date knowledge are desired rather than original views. For the latter the college has already made ample provision. The arrangements for the first series of this course from October to end of year have been completed. Sir W. Broadbent will lecture on the pulse. Dr. Patrick Manson on dysentery and sprue; Dr. Theodore Williams on pulmonary tuberculosis; Dr. Seymour Taylor on tabes; Dr. Judson Bury on peripheral neuritis; Mr. James Cantlie on plague; Mr. C. B. Keetley on coxa vara; Mr. J. Hutchinson on syphilis, and Dr. T. Colcott Fox on lupus.

Correspondence.

Meckel's Diverticulum Mistaken for the Appendix.

Churubusco, Ind., Oct. 14, 1902.

To the Editor:—The inclosed letter I wrote to Dr. James E. Moore and as this case has been referred to twice through The Journal during the past spring and summer, I think it but justice to your readers that I set myself right before them.

James W. Squires, M.D.

Churubusco, Ind., Oct. 14, 1902.

Dr. James E. Moore, Minneapolis.

My Dear Doctor:—I wish to beg pardon in advance for writing to a stranger, but I wish to thank you on my own part, and that from the bottom of my heart; and in behalf of the medical profession in general, from whom I know, perhaps better than any other man, that thanks are due for your valuable article on obstruction of the bowel from Meckel's diverticulum, that was read at the last meeting of the American Medical Association, and published in The Journal of the American Medical Association, Oct. 4, 1902, of which I am a member and have been for a decade. I am deeply interested in the whole paper; we have so little literature on the subject in our profession, but most particularly am I interested in the following, which I copy from your paper: "A verdict for $1,000 was recently given by a jury in one of our western states against a surgeon who admitted that he had removed a Meckel's diverticulum instead of an appendix." I am unquestionably the surgeon who was victimized in this instance, and the one to whom you refer, but the verdict was for $1,500, instead of $1,000; said judgment was rendered April 9, 1902, by a jury of twelve farmers who I suppose knew as much about surgery as the average farmer, and I find that the farmer knows about as much about surgery as the average lawyer at the bar or judge on the bench. Why should not he? Said verdict was approved by J. W. Adair of the Circuit Court, Thirty-third Judicial District, who resides at Columbia City, Ind., who admitted that in his opinion, after hearing the evidence, that the operation was necessary, and that it was well performed, but seemed inclined to believe, as did the attorneys for the prosecution and the jury, that a surgeon had no business to be mistaken, and should he make a mistake, though it be only in the name, and affect not in the least the efficacy of the operation, he should pay for said mistake. I operated on this patient, a young man of 23 years, June 28, 1901. He presented the history and symptoms of all but a typical case of appendicitis. I removed what I named the appendix, dressed the wound and bandaged the patient, the same as I have done on many patients before; I saw him with Dr. N. B. Moore the next day and found him doing well, but doing some moaning. We dressed the wound. I then discharged the patient so far as I was concerned and left him in the care of their family physician, Dr. Moore. Two days later another doctor was called, the family physician discharged, another surgeon called and another doctor. The belly was reopened, my mistake discovered, the family and patient informed of the find, and then pandemonium reigned supreme. Six weeks later, this same patient rode to Columbia City, a distance of ten miles, over country roads, in a wagon or buggy to employ attorneys to prosecute his savior. He secured their services on a contingent fee, as I have been creditably informed, and rode home the same day. The trial came on in March, 1902, and that prosecuting witness was there, a picture of health. The case is now in the Indiana Supreme Court.

Doctor: Should the case be reversed in the Supreme Court, may I not count on you for a deposition? Yours truly,

James W. Squires.

The Successful Treatment of Gonorrhea.

Rutland, Vt., Oct. 22, 1902.

To the Editor:—I note in The Journal, Oct. 11, 1902, an article from the pen of S. T. Rucker, M.D., of Tennessee, "The Successful Treatment of Gonorrhea and All Inflammatory Diseases of the Urethra by Packing It with an Antiseptic Oiled Dressing." The author states that he wishes "to announce to the profession a new method of treating this intractable malady by packing the urethra with an antiseptic oiled dressing."

This "new method" is not a new method, unless the important part of it is the oily medicant. For in a paper published in the *Medical News*, Sept. 27, 1893, Pitts describes a treatment used by him, namely, tamponing the urethra with pledgets of cotton soaked in a mercurial solution, and introduced into the urethra by the aid of an ordinary endoscopic tube. Pitts, if I remember correctly, did not treat his cases as frequently as Dr. Rucker suggests, however. I can not see but that the methods are identical in their purpose, i. e., that of draining and antisepticizing the urethra. If this be the case I can not understand (or have I been able to attain the results that the originators report) how any one who is familiar with the endoscope and has witnessed the spasmodic contractions of the canal on a cotton swab on the end of an applicator, can help expecting to get this same spasm on any foreign substance left in the urethra. The secondary irritation that must result therefrom can not help aggravating the morbid condition present. In the cases I treated by both methods the victims "pulled the string" shortly after leaving my office.

William Warren Townsend, M.D.

Queries and Minor Notes.

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PARAFFIN PROTHESIS.

Plainfield, Iowa, Oct. 27, 1902.

To the Editor:—Can you give me any information on the subcutaneous injection of gelatin, paraffin or other substances to correct slight deformities of the nose? Has an article on this work appeared in The Journal? L. H. M.

Ans.—The method of using paraffin for facial and other prothesis was introduced by Gersuny some two and one-half years ago and has since been followed up by various surgeons in this country and elsewhere. In The Journal for April 19, of this year, there appeared an article by Dr. R. M. Parker, giving a number of successful cases. Other articles have appeared in this country by Drs. Harmon Smith, in the *New York Medical Journal,* May 17; E. P. Robinson, *New York State Journal of Medicine,* May; Hal Foster, *St. Louis Courier of Medicine,* August; and F. J. Quinlan, *Laryngoscope,* August. These do not include all the literature, as there have been numerous other papers published throughout the world.

PREMATURE ESCAPE OF LIQUOR AMNII.

Kearney, Neb., Oct. 15, 1902.

To the Editor:—How long should a physician let a patient (primipara) go after rupture of membranes and escape of liquor amnii before using instruments and delivering? F. A. P.

Ans.—A definite answer as to time can not be given. Rupture of the membranes is not in itself an indication for operative interference. If the rupture occurs in the beginning or early part of labor it is desirable that the patient remain continually in bed in order that as much of the water may be retained in the uterus as possible and that she may be kept clean. Only when version must be done, for example, in case of placenta previa or prolapse of the cord, it is necessary to proceed at once before the water has escaped and the uterus has too firmly contracted around the fetus. If danger to the mother or to the child from prolonged or ineffective labor demands the immediate emptying of the uterus, then the cervix must be dilated by the metreurynter, by manual dilatation or by the cutting operation of Duehrssen, before extraction is attempted.

During pregnancy a discharge of water from the uterus may come rarely from between the chorion and the amnion or it may be the amniotic fluid. In the latter case it may come from a high or a low rupture of the membranes. If the rupture is directly opposite the internal os labor is likely to follow within a few days. Where the opening is high pregnancy may continue for some weeks if the patient be kept continually in the horizontal position and not allowed to rise even to go to the closet. In this way labor may be postponed until the child is sufficiently developed to live outside the uterus.

In all cases it is important that the patient be kept very clean so that the discharge shall not become contaminated and allow an ascending infection of the uterus. It is generally desirable to shave the vulva and use antiseptic washes *externally* several times a day.

TURTLE SERUM.

Dr. W. T. Howle, Charleston, Mo., favors us with the following contribution on a very popular subject:

The turtle is composed of all kinds of flesh, and the serum collected by distilling his blood has a curative action second to none yet discovered. Dr. Rush, a famous fisherman and a dear lover of turtle soup, and who has experimented largely in culinary and medical departments, has produced a blood serum from the lake turtle (Dr. Rush lives on Brewer's lake, Mississippi County, Missouri), which cures all maladies in which there is a blood dyscrasia. The Doctor experimented first on the bullfrog serum, but found it curative only in people who travel on steamboats, ships or flatboats, skiffs and canoes. No person has ever been known to get drowned who had taken even a few drops of the frog serum. When a patient falls into the river, lake or any body of water, after taking a few drops of frog serum, he floats like a cork and no sooner goes under water than he comes up again, thus making it utterly impossible for him to drown. But we are digressing.

Turtle serum is not specific in persons exposed to deep water, but is specific where the water is shallow—say, two or three feet in depth. The frog serum sometimes produces a croaking hoarseness—outside of this it is perfect in its effect. Frog serum is specific in spermatorrhea and sexual weakness. The frog is never impotent and is prolific in sexual appetite. Those who take frog serum have a tendency to be amorous toward everything in reach.

Turtle serum is nutritious, as everybody knows. It cures all people who have become emaciated from any cause. Each drop adds a pound of flesh daily to those who take it. It alters the patient so rapidly that it keeps a tailor busy readjusting his clothing. This can be remedied to some extent by putting him in a private room and keeping him there until he is fat enough to resume his avocation. (If the room is warm he need not wear any clothing.) The turtle serum has driven all the calomel doctors out of Mississippi County, and only Dr. Rush is left. The Doctor is kept busy distilling turtles (the lake and sloughs near by are well supplied with turtles and frogs), and he has thousands of men employed bottling the serum. He is shipping most of his products to Chicago and Canada, there being little demand for them in the South.

Emaciation attacks many people, but will soon be eradicated. Dr. Rush will soon have enough serum to make fat every man, woman and child in the universe. We are sorry for those who have invested largely in other serums, but glad that our countryman and fellow citizen, Dr. Ben Rush, of Mississippi County, Missouri, has made this wonderful discovery. Whether turtles that grow in other counties will produce the same kind of serum, remains undiscovered and does not matter, as Brewer's lake contains enough turtles and frogs to cure all the people that will ever inhabit the globe.

Marriages.

John V. Fowler, M.D., to Miss Bertha Griffiths, both of Chicago, October 8.

A. M. Roundtree, M.D., to Miss Hattie Rogers, both of Adrian, Ga., October 7.

Edwards H. Porter, M.D., to Miss Harriet Noble, both of Tiffin, Ohio, October 29.

Hayward S. Hansell, M.D., to Miss Susie Wilson, both of Atlanta, Ga., October 23.

James Joseph Carroll, M.D., to Miss Agatha I. Ross, both of Baltimore, October 15.

Carleton O. Booth, M.D., to Miss Jeannette Houck, both of De Land, Ill., October 15.

Percy R. Turnure, M.D., to Mrs. Sadie Price Pell, both of New York City, October 8.

Charles Garver, M.D., Lorain, Ohio, to Miss Maud Parrish of Wooster, Ohio, October 7.

Joseph Weller, M.D., Akron, Ohio, to Miss Metta Dague of Cleveland, Ohio, October 15.

James Y. Welborn, M.D., Evansville, Ind., to Miss Mamie Ingle Begley, Inglefield, Ind.

William D. Byrne, M.D., to Miss Nellie Frances Lawlor, both of Chicago, October 22.

George E. Morrow, M.D., Baltimore, to Mrs. Berrie G. King, at Glyndon, Md., October 14.

Francis J. Drake, M.D., Phillipsburg, N. J., to Miss Julia Hazzard of Easton, Pa., October 2.

Edward P. Lockart, Norway, Mich., to Miss Martha Morris James of Oshkosh, Wis., October 22.

Earle H. Russell, M.D., Easley, S. C., to Miss Sallie Brewer of Elberton County, Ga., October 22.

John Lawrence Work, M.D., Dunavant, Kan., to Miss Lida Bergen, of Topeka, Kan., October 15.

William J. R. McFarland, M.D., Syracuse, N. Y., to Miss Virginia Hunt of Baltimore, October 15.

Frank M. Lander, M.D., Enoree, S. C., to Miss Mary Eliza Matthews of Williamston, S. C., October 8.

John Robert Tackett, M.D., Meridian, Miss., to Miss Juanita Ayres of Columbus, Miss., October 16.

J. Parker Blunk, M.D., Atchison, Kan., to Miss Cora Judah of De Kalb, Mo., at St. Joseph, Mo., October 15.

Otto Lewis Mulot, M.D., Brooklyn, N. Y., to Miss Mary Wilkins Roebuck of Newport, Ky., October 15.

Clarence W. Pierce, M.D., Los Angeles, Cal., to Miss Florence Loring Cook of Chelsea, Mass., October 22.

William F. Stephens, M.D., Ashpole, N. C., to Miss Mary Pauline Willis, at Chesapeake City, October 15.

Louis Abramson, M.D., Shreveport, La., to Miss Bella Gladys Loewenstein of Waco, Texas, October 14.

Luther Zwingli Breaks, M.D., Chicago, to Miss Harriet Esther Hauser of Crawfordsville, Ind., October 7.

William Henry Booth, M.D., Salem, Ohio, to Miss May Eunice Humphrey, of Ashtabula, Ohio, October 15.

William H. Dyer, M.D., Providence, R. I., to Miss Jeannette Elizabeth Browne of Somerville, Mass., October 7.

Herbert A. Robinson, M.D., Kenosha, Wis., to Miss Flora Hollins of Council Bluffs, Iowa, at Chicago, October 9.

Irving W. Hollingshead, M.D., Philadelphia, to Miss Florence Edith Buckingham of Worcester, Mass., October 15.

Louis G. Knox, M.D., Danbury, Conn., to Miss Blanche Evans of Aberdeen, Wash., in Jersey City, N. J., October 5.

William Dudley Hill, M.D., Harriman, Tenn., to Miss Florence Walker of Milford, Ohio, at Harriman, Tenn., October 9.

Clarke Berten Fulkerson, M.D., formerly of Three Rivers, Mich., to Miss Cora Christine Kier of Pontiac, Mich., June 25.

Clarence Martin Burnham, M.D., to Miss Mary Lydia Harroun, both of Watseka, Ill., October 15. They will reside at Chickasha, I. T.

Deaths.

Joseph H. Van Deman, M.D. Western Reserve University, Cleveland, Ohio, 1852, a member of the American Medical Association and one of the most esteemed physicians of the South, died at his home in Chattanooga, Tenn., October 18, after an illness of several weeks from malarial fever, aged 73. He served through the Civil war with honor and became chief surgeon a year later, and medical purveyor of the United States military railroad, division of the Mississippi. Later he was made surgeon of the refugees and freedmen's department under the United States. He was elected president of the Tennessee Medical Society in 1873, and presided over that body two years. For twenty-five years he has been a member of the American Medical Association, and was for three years, 1867 to 1869, a member of the Judicial Council. He had been a member of the American Public Health Association since 1874. The Chattanooga Medical Society held a special meeting, October 18, and passed resolutions.

William Arnold Adams, M.D. Medical College of Georgia, Augusta, 1876, one of the most distinguished surgeons in the southwest, died from fatty degeneration of the heart, at his home in Fort Worth, Texas, October 15, aged 49. Dr. Adams was among the first physicians in Fort Worth to interest himself in the establishment and perpetuation of the medical college, and was that institution's first professor of the practice of medicine. He was a former vice-president of the Texas State Medical Association; also ex-medical examiner for the Twenty-Seventh Judicial District and a member of the New York Medicolegal Society. He served in the Second Regiment of Texas Volunteers as surgeon, and at the time of his death was physician in charge of the Protestant Sanitarium at Fort Worth.

Eugene G. Carpenter, M.D. College of Physicians and Surgeons, Baltimore, 1884, superintendent of the Columbus (Ohio) State Hospital, member of the Columbus Academy of Medicine and of the American Medical Association, died from apoplexy, after an illness of two days, October 19, aged 44. His professional life had been devoted to the special study and practice of nervous and mental diseases, and he had occupied that chair in the Ohio Medical University.

Thomas Wilde, M.D. Bellevue Hospital Medical College, New York, 1866, an esteemed veteran member of the Kings County Medical Society and a surgeon of well-known ability and experience, died at his home in Brooklyn, October 5, aged 65. His death was due to concussion of the brain following a trolley-car accident in September.

John M. Brewster, M.D. Berkshire Medical College, Pittsfield, Mass., 1841, for many years a practitioner of Pittsfield, and a member of the Hampshire County Medical Society, died at his home in Pittsfield, October 15, after an invalidism of four years, consequent on a cerebral hemorrhage, aged 84.

Charles W. Bowen, M.D. College of Medicine, Syracuse (N. Y.) University, 1874, a prominent physician of Western Massachusetts, and a member of the American Medical Association, died at his home in Westfield, Mass., October 10, after an illness of four months, aged 59.

I. Newton Goff, M.D. College of Physicians and Surgeons, New York, 1858, a leading physician of Cazenovia, N. Y., died at his home in that village, October 13, from paralysis, after an illness of one week, aged 69. He was a member of the American Medical Association.

H. Marcus Schnetzler, M.D. Starling Medical College, Columbus, Ohio, 1862, one of the oldest and most esteemed physicians of Toledo, and a member of the Toledo Medical Society, died suddenly at his office in that city, October 16, from apoplexy, aged about 70.

Robert G. Rothrock, M.D. University of Nashville, Tenn., 1861, a prominent physician of Nashville, who served as surgeon of the Fiftieth Tennessee Infantry during the Civil war, died at his home in Nashville, October 9, after an illness of several months, aged 66.

Harvey W. Rainey, M.D. Long Island College Hospital, Brooklyn, N. Y., 1882, for seven years a physician in the Central Hospital for the Insane, Indianapolis, died from paresis, at his home in Indianapolis, October 15, after an illness of three years, aged 48.

Edwin F. De Graffenried, M.D. University of Pennsylvania, Philadelphia, 1846, one of the oldest citizens of Columbus, Ga., surgeon of the Fourth Alabama Infantry, C. S. Army, died at the home of his sister in Wynnton, Ga., October 5, aged 79.

Rangwald J. Gregersen, M.D. *Colorado School of Medicine*, Boulder, 1901, an interne in St. Joseph's Hospital, Denver, died suddenly at that institution, October 14, as the result of a fall four stories down an elevator shaft, aged 41.

William H. Edwards, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1868, one of the oldest practitioners of Clearfield County, Pa., died recently at his home in Smithmills, Pa., from heart disease, after a long illness.

Chauncey Coston, M.D. Castleton (Vt.) Medical College, 1844, a veteran physician of Chillicothe, Mo., and an assistant surgeon in the Civil war, died at his home in Chillicothe, after several years of invalidism, October 19, aged 86.

Frederick R. Nordmann, M.D. College of Physicians and Surgeons, Baltimore, 1884, who had suffered for several years from nephritis and neuralgia, committed suicide by shooting himself through the head, October 21, aged 42.

Joseph R. Bradway, M.D. Rush Medical College, Chicago, 1847, a pioneer physician of Alameda County, Cal., and formerly health officer of Oakland, died at his home in that city, October 11, after a lingering illness, aged 84.

Andrew B. Bausman, M.D. Rush Medical College, Chicago, 1882, a member of the American Medical Association, died at the West Side Hospital, Chicago, October 21, from pneumonia, after an illness of one week, aged 49.

William H. Everson, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1881, of Pratt, Kan., died at St. Joseph's Hospital, Kansas City, October 9, from septic poisoning, following an operation for appendicitis.

James J. Norton, M.D. Missouri Medical College, St. Louis, 1852, of Monroe City, Mo., a member of the American Medical Association, died at his home, October 16, from paralysis, after an illness of about three months.

James M. Miller, M.D. Louisville (Ky.) Medical College, of Bloomington, died at St. Joseph's Hospital in that city, October 12, from dropsy and chronic liver disease, after an illness of ten months, aged 47.

John T. Field, M.D. Missouri Medical College, St. Louis, 1891, assistant physician at State Hospital for the Insane, No. 2, St. Joseph, Mo., died at that institution, October 7, after an extended illness, aged 34.

Marcus E. Sanborn, M.D. Medical College of Ohio, Cincinnati, 1891, of Eagle River, Wis., died at the Milwaukee Sanitarium, Wauwatosa, Wis., October 11, from uremic convulsions, aged 34.

E. P. Smith, M.D. Hospital College of Medicine, Louisville, 1890, of Cleveland, Tenn., died at Erlanger Hospital, Chattanooga, October 15, three days after an operation for intussusception, aged 42.

Clarence Martin Burnham, M.D. College of Physicians and Surgeons, Chicago,, 1902, died at his home in Watseka, Ill., October 18, from acute peritonitis, after an illness of three days, aged 21.

Elvira Ranier, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1877, secretary of the Oswego (N. Y.) County Medical Society, died at her home in that place, October 14, aged 55.

William L. Mathers, M.D. Cincinnati College of Medicine and Surgery, 1895, of Bowling Green, Ohio, coroner of Wood County, died near Fostoria, Ohio, October 8, from hepatitis, aged 41.

M. Walter Brooks, M.D. University of Vermont, Burlington, 1879, a practitioner of New York City, died at the home of his brother in Berne, N. Y., October 14, after a long illness, aged 59.

Edwin A. W. Harlow, M.D. Harvard Medical School, Boston, 1846, a retired physician of Boston, died at his home in Wollaston, Mass., October 12, after a brief illness, aged 88.

C. E. Leaphart, M.D. Medical College of the State of South Carolina, Charleston, 1871, died at his home in that place from acute indigestion, October 6, after a short illness, aged 57.

John M. Roberts, M.D. Tulane University, New Orleans, 1881, of Atlanta, Ga., died at Jacksonville, Fla., October 12, from consumption, after a prolonged illness, aged 40.

Alfred Letourneau, M.D. Laval University, Quebec, 1886, of Alpena, Mich., a member of the Thunder Bay Medical Society, died at Arthabaskerville, P. Q., October 6.

Edgar O. Allhands, M.D. University of Louisville (Ky.), 1889, died suddenly at his home in Louisville, October 11, from heart failure following typhoid fever, aged 45.

Fred C. Sarver, M.D. Baltimore Medical College, 1895, committed suicide by taking chloroform and carbolic acid, at his home in Blocher, Ind., October 7, aged 30.

Albert Blood, M.D. Rush Medical College, Chicago, 1881, died suddenly at his home in Capron, Ill., it is supposed from wood alcohol poisoning, October 22, aged 42.

C. Edwin Poyntz, M.D. Hospital College of Medicine, Louisville, 1891, died at his home in Point Lick, Ky., October 21, from gunshot wounds received in a duel.

Lorenzo P. Barrows, M.D. Albany (N. Y.) Medical College, 1844, of Albany, N. Y., and of Sycamore, Ill., died suddenly at his home in Albany, October 12, aged 83.

John A. Buffington, M.D. Jefferson Medical College, Philadelphia, 1884, died at his home in New Windsor, Md., suddenly, from heart disease, October 17, aged 40.

John S. Cameron, M.D., one of the oldest practitioners of Defiance County, died suddenly at his home in Evansport, Ohio, October 9, from heart disease, aged 66.

Alfred P. Haynes, M.D. Omaha (Neb.) Medical College, 1889, died at his home in Wahoo, Neb., October 13, from rheumatism of the heart, aged 54.

Thomas L. Terry, M.D. Louisville (Ky.) Medical College, 1888, died at his home in Jennings, La., October 15, after an illness of several months, aged 40.

James M. Dunlap, M.D. St. Louis and Missouri Medical College, St. Louis, 1857, died at his home in High Point, Mo., September 29, aged 70.

Robert S. Gilbert, M.D. Kentucky School of Medicine, Louisville, 1867, died at his home in Oak Cliff, Dallas, Texas, September 21, aged 64.

Lytton W. Pilley, M.D. Washington University, St. Louis, 1880, died at his home in Kissimmee, Fla., October 4, after an illness of three days.

George E. Mecuen, M.D. Harvard Medical School, Boston, 1875, died suddenly at Roxbury, Mass., October 22, from meningitis, aged 59.

M. S. Derringer, M.D. of East Fairfield, Ohio, died recently at Barnesville, W. Va., insane from over-indulgence in morphin, aged 48.

Antonius A. Rowley, M.D. Rush Medical College, Chicago, 1868, died at his home in Middleton, Wis., October 2, from Bright's disease.

Daniel A. Fogarty, M.D. Bellevue Hospital Medical College, New York, 1896, died suddenly at his home in New York City, October 5.

Horace Strimple, M.D. College of Physicians and Surgeons, 1893, died at his home in Concordia, Mo., October 16, after a short illness.

Book Notices.

DISEASES OF THE ORGANS OF RESPIRATION. A Treatise on the Etiology, Pathology, Symptoms, Diagnosis, Prognosis and Treatment of the Diseases of the Lungs and Air-Passages by Samuel West, M.A., M.D., F.R.C.P., Assistant Physician and Lecturer on the Principles and Practice of Medicine at St. Bartholomew's Hospital. In Two Volumes, with Numerous Diagrams and Illustrations. Cloth. Pp. 913. Price, $10.00. London: Chas. Griffin & Co. Philadelphia: J. B. Lippincott Co. 1902.

This is a work on which the author has spent many years, and he has endeavored to include within its scope most diseases of the larynx, and practically all diseases of the trachea, bronchi, lungs and pleura. In this he has been very successful, having devoted considerable space not only to the ordinary diseases of these organs, but also to such affections as interlobular emphysema, septic embolic and hematogenous pneumonia; pulmonary infarct, embolism, and thrombosis; hysteric neuroses, diaphragmatic hernia, hernia of the lungs, syphilis of the lungs and pleura, actinomycosis, aspergillosis and coccidiosis of the lungs; hydatids and new growths of the lungs and pleura. The various diseases are treated as concisely as practicable, considering the relative importance of each subject. The author's style is terse and clear. He has not hesitated throughout the book to express his own opinions, but they have been founded on long and extensive experience and usually they are supported by ample evidence. He takes issue with the commonly accepted theories regarding pneumothorax and bronchopneumonia, but sets forth in detail the grounds for his conclusions. He has consulted carefully the literature of the day and his work expresses the most modern thought on the diseases of which it treats. There are numerous illustrations that aid much in the comprehension of the text and frequently short clinical accounts are inserted to illustrate some special points in the consideration of individual diseases. The subject-matter is well arranged and the reader who wishes to make quick reference to any article is greatly aided by the bold-faced type which marks the various subdivisions. The type as a whole is not so large as desirable; however, it is clear and it has enabled the publisher to compress a great deal into the limits of the two volumes, 913 pages. All in all, we can heartily commend the work.

DISEASES OF THE RECTUM AND ANUS. Designed for Students and Practitioners of Medicine. By Samuel Goodwin Gant, M.D., LL.D., Professor of Rectal and Anal Surgery at the New York Post-Graduate Medical School and Hospital. Second Edition, Rewritten and Enlarged. With 37 Full-page Plates, 20 of Which Are in Colors, and 212 Smaller Engravings and Half-tones. Cloth. Pp. 687. Price, $5.00. Philadelphia: F. A. Davis Co. 1902.

The subject of rectal diseases has recently been receiving more attention than in the past, and Gant, in this book, has presented the latest knowledge in a practical manner for the general practitioner as well as for the specialist. Several chapters and illustrations have been added in this revision.

Miscellany.

The Family Physician.—It is amusing to read and hear of the passing of the family physician. There never was a time in our history in which he was so much in evidence, in which he was so prosperous, in which his prospects were so good or his power in the community more potent. The public has even begun to get sentimental over him! He still does the work; the consultants and the specialists do the talking and the writing—and take the fees. By the work, I mean that great mass of routine practice which brings the doctor into every household in the land and makes him, not alone the adviser, but the valued friend. He is the standard by which we are measured. What he is we are; and the estimate of the profession in the eyes of the public is their estimate of him. A well-trained sensible doctor is one of the most valuable assets in a community, worth to-day, as in Homer's time, many another man.—Osler.

Quackery and Religion.—It is with great regret, says the *Cleveland Medical Journal*, that we notice in a copy of the *Midland Methodist* a full-page advertisement of one of the most widely known quacks in Ohio. Not alone is this advertiser a quack, but he is unregistered and uneducated. Still he manages to practice by employing registered physicians who are willing to lend themselves to the enterprise, whose character has been clearly shown in evidence given at various trials in court. In spite of this fact the *Midland Methodist* gives a whole page to the exploitation of this effort to prey upon the afflicted and equal space to forwarding the use of a "remedy" which is simply a disguised whisky. The spectacle of a religious paper carrying an advertisement that is in effect an invitation to its readers to cultivate liquor-drinking is remarkable, but unfortunately not unique. It is curious, indeed, that the religious press appears to be as a rule so conscienceless in accepting advertisements.

Censure for Australian Advertising Physicians.—During the king's illness some of the leading Australian doctors and surgeons supplied the Sydney and Melbourne papers with comments and forecasts and descriptions of the malady, its causes and effects, mode of treatment, etc. According to the *London Chronicle*, they are to be reported to the British Medical Association and the Royal College of Surgeons on the ground that they had violated professional ethics and committed the unpardonable sin of self advertisement. As one of their critics says: "This sort of thing is far and away better than a double column advertisement in the pages ordinarily devoted to that purpose." It is urged in some of the commonwealth papers that the unwritten law preventing well-qualified doctors and surgeons from advertising is an absurd anachronism, and leads to all sorts of ignorant and unscrupulous quacks flourishing at the expense of a credulous and ill informed public.

A Method of Introducing the Stomach Pump.—An effective and entirely safe method of preventing nausea occasioned by the stomach pump is that of freezing two or three inches of the extremity of the tube just prior to its introduction, the object being to secure slight temporary anesthesia of the fauces and pharynx by means of the cold rubber. In this way cold is applied exactly where anesthesia is needed, and the irritability is overcome. Thus the tube may be introduced for the first time with practically no gagging, straining or nausea. The extremity of the tube may be frozen by a few moments' spraying with ethyl chlorid. The tube, of course, may be chilled in other ways, but the ethyl chlorid is convenient and efficient. The tube has been found not to stiffen markedly under the influence of extreme cold, so no violence from the frozen rubber can occur. And by the time the tube reaches the cardia its low temperature is sufficiently overcome to prevent any danger to the gastric mucosa, though the tube may remain in the stomach some time.—From *Ther. Gazette* in *Med. Fortnightly*.

Purifying Milk by Pressure.—To investigate the effect of pressure on bacteria an apparatus has been devised which is remarkable for having produced what is probably the greatest hydrostatic pressure ever reached—over 450,000 pounds per square inch. The particular object of these experiments was to determine whether the bacteria in milk might not be killed by hydrostatic pressure, so that it would keep a longer time without souring. Moderate pressures were first tried, but appeared to have no effect. The pressures were then increased and notable results were obtained. Milk subjected to pressures of 70 to 100 tons kept from twenty-four to sixty hours longer without souring than milk which had not been subjected to compression. The degree to which the keeping qualities of milk were improved appeared to depend as much on the time for which the pressure was maintained as on the actual pressure reached. Pressures of ninety tons per square inch maintained for an hour prevented milk from souring for from four to six days. Complete sterilization of the milk, however, was in no case effected, even at the highest pressures, and the milk in many cases acquired peculiar tastes and odors on keeping, indicating that certain species of bacteria were killed while others were not.—*Practical Druggist*.

Medical Practice in China.—The *Literary Digest* gives an interesting account of Chinese medical practice from an article by Pastor Stenz, a German missionary long resident in China, in the New York *Staats Zeitung*. It seems that no license or special course of study is necessary for practice there. The official course of study is supposed to fit a man to be anything from a judge to a general, and many of the physicians are students who have failed to pass the government examination. Most of them, however, have taken lessons from experienced physicians and apothecaries.

"When a Chinaman falls ill and can not visit the physician, he sends a cart or an ass to fetch the latter, for no physician of repute will visit patients on foot. Having arrived at the house the physician is first regaled with tea, stronger liquors and sweetmeats, or, if the journey has been long, an elaborate meal is set before him, and he pays not the slightest attention to his patient, even in an 'emergency case' until his appetite is satisfied. The writer cites the case of a European friend who had dislocated his arm and was in great pain, but the doctor calmly finished his repast before entering the sick-room. On seeing the patient the doctor asks a few general questions, the most important of which appears to be whether the patient can still eat or how long he has gone without food. Then the doctor sits feeling the patient's pulse and meditating for five or ten minutes, after which he names the malady, writes a prescription, and goes away. Diagnosis by the pulse alone seems ridiculous, but European physicians have had occasion to marvel at the results of the method in Chinese hands.

"Chinese physicians receive no fees, though gifts are sometimes made to them after successful treatment. On the other hand, most of them are their own druggists, and, if not, they get commissions on their prescriptions. The prescriptions are very complex, often containing twenty ingredients, which, however, are put up separately. Most medicines are exhibited in the form of copious hot draughts and are bitter and exceedingly nauseous. Most of them are of vegetable origin. Ginseng is the most highly prized and enters into almost every prescription.

"But the Chinese physician does not depend wholly on drugs. Massage is much used, particularly in affections of the head and stomach. In severe cases the treatment is heroic, for the operator kneels on the patient's abdomen.

"Another favorite treatment is acupuncture, or the insertion of needles. The medical student practices on a manikin covered with little holes, and must learn to plunge the needle accurately into the right ones for the treatment of various diseases. As the needle is often inserted more than an inch into the body, it is evident that the exact location of the puncture is a matter of some importance. Father Stenz submitted to this treatment also—for obstinate and long continued nausea. The physician discovered dark spots under the tongue, punctured them, let out a quantity of dark-colored blood, and cured the patient.

"Vaccination in the European manner is in general use. Vaccination is said to have been practiced for more than a thousand years, but the original method, according to an old book, seems to have consisted in applying to the nostrils of children annually the dried and powdered scabs of smallpox sores.

"The Chinese have excellent teeth and little use for dentists. The use of the forceps in extracting is unknown. Aching nerves are killed by inserting into the cavity a castor-oil bean heated to the burning point.

"Though physicians are not licensed, there are official unsalaried physicians, corresponding to our coroners, whose duty it is to examine and give death certificates in cases of sudden death. Their reports depend largely on the financial ability and liberality of suspected persons. In Peking there is a medical council of eighteen which is supposed to supervise the practice of medicine throughout the empire. Its members are physicians to the court and the imperial family."

Clippings from Lay Exchanges.

PRESIDENTIAL PERITONEAL EXTENSION.

In the description of the recent operation on President Roosevelt it is thus written:

"A little surgical appliance like the end of a syringe drawn to a fine point was inserted in the swelling which stood out on the President's shin midway between the knee and ankle. A miniature pump was attached, the cavity under the peritoneum was emptied 'by aspiration,' as the doctors say—which is an other term for pumping—and it was all over.

"Not even a President can have edged tools inserted in his tissues beyond the wrappings of the bones itself, which are called peritoneum, without feeling it."—*Chicago Record-Herald*, Sept. 27, 1902.

Later: "At Indianapolis nothing was done but to insert an inspirating needle to draw off the serum."—*Chicago Record-Herald*, Sept. 30, 1902.

EPIDEMIC OF FAT OUTSIDE THE HEART.

"Dr. —— returned Wednesday from San Francisco, where he went to be operated upon for hernia. Just as the physicians were about to give him chloroform an examination showed his heart to be covered with fat on the outside. Chloroform would have cost him his life. He must diet for weeks to reduce the fat.

"Dr. —— learned that Nellie —— died at Oakland Saturday under exactly the same circumstances.

"Physicians about the bay have taken warning."—*Redding* (Cal.) *Free Press*, Dec 11, 1901.

INCREASE OF INSECTED AREA.

"Larger than these two is the increase of the insected area over that of last February. . . . All stories to the effect that vaccine lympth is cecured in any other manner are the products of ignorance or willful misrepresentation."—*Covington* (Ind.) *Friend*, March 14, 1902.

A PAST MASTER.

"Dr. ——'s new position is called 'past master in surgery,' and it gives him the rank of lieutenant on the training ship Dorothea."—*Daily News* (Chicago), August 3, 1901.

PHYSIC AND REAL ESTATE.

"Dr. ——, having graduated in Medicine, will now open an office with the N. P. people, Chicago, for the sale of North Dakota lands."—*Bismarck* (N. D.) *Tribune*, March 22, 1902.

CARDIAC MIGRATION.

"A—— B——, . . . is having his heart moved to his left side from the right side, where it had worked its way."—*Covington* (Ky) *Post*, May 17, 1902.

GASTRIC ULCERATION OF THE STOMACH.

"Gastric ulceration of the stomach, say these doctors, is not confined to men, but is afflicting women also to a great extent." —*Sacramento* (Cal.) *Record-Union*, May 8, 1901.

MUCH DECIMATED.

Canal, Jan. 6.—We are having an epidemic of scarlet fever and scarletina. Several of our schools are very much decimated."—*Franklin* (Ky.) *News*, Jan. 7, 1902.

SUPERFOCATION.

" 'A Case of Superfocation' was given by Dr. —— of Witt."—*Chicago* (Ill.) *Chronicle*, Oct. 30, 1901.

Medical Organization.

There is no subject of more vital importance to the medical profession at the present time than that of organization. Since the St. Paul meeting of the Americal Medical Association, when the reorganization of that body was adopted, the subject has been taken up by more than half of the state societies and quite a number have already adopted the plan recommended by the national association. Other states have appointed committees on reorganization, and during the next year we may expect to see that two-thirds of the state societies have adopted a constitution on a more or less uniform plan.

All the state bodies that have reorganized have committees or councilors appointed for the purpose of creating county societies. A few of the workers thus appointed are men of experience. Others are anxious to succeed in what they are trying to accomplish, but are too often at a loss to know how to proceed. They want to learn.

There are important questions to be settled, and a thorough discussion is desirable.

For these and other reasons we propose to devote a department in The Journal to the subject of organization in which we hope to stimulate and encourage those who are now working and awaken an interest in those who do not yet realize the importance of a more systematic organization than has heretofore existed. We hope to be able to print reports of progress from every part of our country, and for this purpose we ask for all news bearing on the subject.

CONSTITUTION FOR STATE AND COUNTY SOCIETIES.

The Committee on Organization of the American Medical Association has prepared a constitution for state societies and one for county societies, each of which is issued in pamphlet form. As we propose to report what each state has done with this constitution, what amendments or additions have been or may be made, and the same with county societies, we suggest that those interested obtain a copy of each of these pamphlets so that they may be able to understand and appreciate the references made to them. We shall be glad to send these constitutions for state and county societies on receipt of application and a 2c. stamp to cover mailing.

THE REORGANIZATION OF THE MICHIGAN STATE MEDICAL SOCIETY.

Detroit, Mich.

To the Editor:—During the year 1901 Dr. Leartus Connor, president of the society for that year, submitted to a committee on organization, consisting of Dr. A. E. Bulson of Jackson, Dr. George Dock of Ann Arbor, and Dr. Charles T. McClintock of Detroit, the plan of organization suggested by the American Medical Association. With some amendments made to meet the conditions in this state and to which I shall draw attention later, the Constitution and By-Laws recommended for the State Societies by the American Medical Association was unanimously adopted by the State Society at its annual meeting last June.

The society provides for:

1. The retention till death of members of long standing and faithful service, by making them resident honorary members:

Article IV.

Sec. 4. *Honorary Members.*—Honorary members shall be of two classes, resident and non-resident.

Sec. 5. Resident Honorary Members shall be chosen from those who have practiced medicine not less than *thirty* years and have been active members in good standing in this society for at least *ten* years. They shall be nominated by the Council at any of its meetings, and may be elected by the House of Delegates at the annual meeting following such nomination. They shall have all the privileges of the society and receive all publications without the payment of dues. Not more than five Resident Honorary Members shall be elected at any one meeting.

Sec. 6. Any distinguished physician, not a resident of this state, may be elected an Honorary Member, provided he has been nominated by the Council at a previous meeting. Not more than two Non-resident Honorary Members shall be elected at any one meeting.

2. A monthly journal instead of the Annual Transactions.

3. Reciprocity of membership among state societies.

Article X.—Reciprocity of Membership Among State Societies.

To broaden professional fellowship among the state societies, the Michigan State Medical Society, by its President and Secretary, is ready to arrange with other state medical societies, having equal requirements, for the interchange of certificates of membership. Members removing from one of these states to another may thus avoid the formalities of re-election.

4. A Board of Councilors, consisting of 12 members, one chosen from each congressional district—which is patterned after the Board of Trustees of the American Medical Association—to which is given the superintendence of the Journal, the control of the finances of the Society, the organization and nurture of the County Societies, the selection of the Secretary and Treasurer, the nomination of the honorary members. The Councilors are elected for six years, two being elected each year. The Council holds a meeting also in January.

5. The division of the Society into three Sections, one on General Medicine, one on Surgery, Ophthalmology and Otology, and one on Obstetrics and Gynecology.

6. The popular election of the President by the general society; of the Secretary and Treasurer by the Council at its January meeting.

7. Special effort is made to make use of the experience and energy of all the officers. In so far as possible, the Vice-Presidents are selected with especial reference to the promotion of the work of the Councilors in the three Districts nearest their respective residences.

8. The membership in the County Society is limited, as follows:

Chapter XIII.

Sec. 5. Each County Society shall judge of the qualifications of its own members; but, as such societies are the only portals to this society and to the American Medical Association, every reputable and legally registered physician who is practicing, or who will agree in writing over his own signature to practice, non-sectarian medicine only, and to sever all connections with sectarian colleges, societies and institutions, shall be entitled to membership. Before a charter is issued to any county society, full and ample notice and opportunity shall be given to every such physician in the county to become a member.

The Secretary of each County Society makes his report of the physicians in his county to the Councilor of his District by the first day of January.

Sec. 11. At the first meeting after January 1, due notice having been given, each county society shall elect annually a delegate or delegates to represent it in the House of Delegates of this society in the proportion of one delegate to each FIFTY members or major fraction thereof. The Secretary of the county society shall immediately send the list of its delegates to the Secretary of this society.

SEC. 12. The Secretary of each county society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this state, and such other information as may be deemed necessary. He shall annually furnish an official report containing such information, upon blanks supplied him for the purpose, to the Councilor of his District by the *first day of January*. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his report shall be certain to account for every physician who has lived in the county during the year.

COUNCILORS.

The state is divided into twelve councilor districts, one member from each congressional district.

1st—Leartus Connor, Chairman, Detroit.
2d —N. H. Williams, Jackson.
3d —W. H. Haughey, Secretary, Battle Creek.
4th—G. W. Lowry, Hastings.
5th—J. B. Whinery, Grand Rapids.
6th—C. B. Burr, Flint.
7th—Oliver Stewart, Port Huron
8th—S. I. Small, Saginaw.
9th—B. H. McMullen, Cadillac.
10th—H. B. Langdon, Bay City.
11th—W. T. Dodge, Big Rapids.
12th—Theo. A. Felch, Ishpeming.

COUNCILOR DISTRICTS.

The Councilor Districts comprise the following Counties respectively.

First Councilor District—Wayne County

Second Councilor District—Jackson, Lenawee, Monroe, and Washtenaw.

Third Councilor District—Branch, Calhoun, Eaton, Hillsdale, and Kalamazoo.

Fourth Councilor District—Allegan, Barry, Berrien, Cass, St Joseph, and Van Buren

Fifth Council District—Ionia, Kent, and Ottawa

Sixth Councilor District—Genesee, Ingham, Livingston, and Oakland.

Seventh Councilor District—Huron, Lapeer, Macomb, Sanilac, and St. Clair.

Eighth Councilor District—Clinton, Saginaw, Shiawassee, and Tuscola.

Ninth Councilor District—Benzie, Lake, Leelanau, Manistee, Maso[illegible], Oceana, and Wexford.

[illegible] ict—Alcona, Alpena, Arenac, Bay, Cheboyga[illegible] Gladwin, Iosco, Midland, Montmorency, Ogemaw, Oscoda, Otsego, and Presque Isle.

Eleventh [illegible] Charlevoix, Clare, Grand Traverse, G[illegible] Mecosta, Missaukee, Montcalm, Osceo[illegible]

Twelfth [illegible] Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Isle Royale, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontanogan, and Schoolcraft.

At the time of the adoption of the new Constitution, the following County Societies were in affiliation with the State Society:

The Bay County Medical Society.
Berrien County Medical Society.
Calhoun County Medical Society.
Cass County Medical Society.
Cheboygan County Medical Society
Clinton County Medical Society.
Jackson County Medical Society.
Lenawee County Medical Society.
Medical Association of Barry and Eaton Counties
Ontonagan County Medical Society.
Saginaw County Medical Society.
Washtenaw County Medical Society.
Wayne County Medical Society.

Upon the adoption of the new Constitution and By-Laws, the relationship between the State Medical Society and the County Society became real instead of nominal. In the counties in which the local societies were already organized, application to the State Society for a charter must be made anew.

When the charter is granted, the County Society becomes a branch of the State organization. The members become by virtue of this charter members of the State Society and eligible on application to membership in the American Medical Association.

NEW SOCIETIES.

Since the reorganization the following County Societies have been chartered:

First District—Wayne.
Second—Jackson, Lenawee, Washtenaw and Monroe.
Third—Branch, Calhoun, Eaton, Hillsdale, Kalamazoo and Berry.
Fourth—Berrien and Cass.
Fifth—Ionia.
Sixth—Livingston, Oakland and Ingham.
Seventh—Lapeer and Clinton.
Eighth—Saginaw.
Ninth—Wexford and Mason.
Tenth—Bay, Crawford, Montmorency, Ogemaw, Oscoda and Otsego.
Eleventh—Mecosta, Montcalm, Roscommon, Isabella and Grand Traverse.
Twelfth—Houghton.

As the counties of Ogemaw, Montmorency, Crawford, Oscoda, Roscommon and Otsego are thinly populated and are adjacent, the physicians thereof have united in forming a County Society known as the O. M. C. O. R. O. County Society, which formation is permitted by the By-Laws of the State Society.

All the Councilors of the Districts have entered into their work with an enthusiasm worthy of the cause, and they have been successful beyond expectation. To aid them the Vice-Presidents were selected with especial reference to their fitness for this work. To the First Vice-President, Dr. J. C. Wilson of Flint is given the supervision of the First, Sixth and Seventh Districts.

To the Second Vice-President, Dr. A. W. Crane of Kalamazoo, is given the Second, Third and Fourth Districts.

To the Third Vice-President, Dr. W. K. West of Calumet, is given the Upper Peninsula or Twelfth District.

To the Fourth Vice-President, Dr. H. B. Garner, of Traverse City, is given the Fifth, Ninth and Eleventh Districts.

To the President, Dr. A. E. Bulson, of Jackson, is given the Eighth and Tenth Districts.

To Dr. Bulson, the President of the Society, to Dr. Leartus Connor of Detroit, Chairman of the Council, and to Dr. W. H Haughey, Battle Creek, Secretary of the Council, special credit must be given. One or two of them visited the Councilor of the respective Districts, the meeting of every society, explaining to the members the necessity and the method of organization.

I think I may safely say that since the American Medical Association has issued its earnest call for the organization of the medical profession, no state has entered on the work with a better realization of the need of organization, with a fuller responsibility of the work to be done and with greater success. We hope by the end of the year to have at least thirty counties chartered.

Our aim has been to make the State Society and the County Societies as attractive as possible and to provide the machinery for the conveying of this knowledge to all the members of the profession.

Respectfully,

A. P. BIDDLE, Secretary.

[Dr. Biddle has given praise to others deserving it, but he, as secretary, should have special mention. Michigan is to be congratulated on having many faithful workers, not the least of whom is its secretary.]

In a private communication, one of the active workers in the Michigan State Society says:

"I am growing more convinced that the only way for success in medical organization is the promotion of the spirit which helps all, especially the rank and file of the profession, who rarely get out of the county in which they begin practice. In our work in Michigan, success is assured, as individuals grasp it. They are full of thanks for a state organization, which has stimulated them to form a county society—all their own—with officers all their own and a chance to send a delegate who will meet on equal terms with the delegates from the wealthy centers; that has established a journal in which they have a part ownership, and through which their isolation may be transformed to a constant companionship with every other part of the state and the medical world; that is trying to make such arrangements that their membership in the Michigan societies shall be a practical membership in as many states as have the same requirements as Michigan; that has arranged that when they grow feeble or old, or poor, they shall be retained as honorary members till death; that has picked out men to help them not only in society organization, but will constantly help them when difficulties assail them; in short, a society which provides the means to make their lives pregnant with hope, and larger success in all their undertakings. It is clear that larger gains will come to those able to do more skilful service in exceptional cases, and so the gain will be universal."

CHICOT COUNTY (ARK.) MEDICAL SOCIETY.

This society has been organized in accordance with the suggestions of the American Medical Association. Every physician in the county is a member. The following officers were elected: Dr. Alexander G. Anderson, Carmel, president; Dr. Robert N. Henry, Lake Village, vice-president; Dr. M. M. Norton, Sunnyside, treasurer, and Dr. Edward P. McGehee, Luna Landing, secretary.

M'CRACKEN COUNTY (KY.) MEDICAL SOCIETY.

At the first meeting of this society since its reorganization, which was held in Paducah, October 7, the constitution and by-laws proposed by the American Medical Association for county organizations were adopted.

HENRY COUNTY (TENN.) MEDICAL ASSOCIATION.

This society met at Paris, October 8, and reorganized by electing Dr. A. F. Paschal, Cottage Grove, president; Dr. Richard A. Grainger, vice-president; Dr. John H. McSwain, Paris, secretary. The association unanimously adopted as its by-laws and constitution those advised by the American Medical Association.

SUMMIT COUNTY (OHIO) MEDICAL SOCIETY.

A meeting of this society was held in Akron, October 7. Dr. John H. Seiler, Akron, read a paper on the reorganization of the society, and a committee was appointed to revise the present constitution of the society to make it conform with that of the Ohio State Medical Society.

MASON COUNTY (MICH.) MEDICAL ASSOCIATION.

This association was reorganized at Ludington, September 30, under the new laws of the Michigan State Medical Society, by the newly-appointed councilor for the Ninth Congressional district, Dr. Bartlett H. McMullen, Cadillac.

SAN JOAQUIN VALLEY (CAL.) MEDICAL SOCIETY.

The fourteenth regular semi-annual meeting of this society was held in Bakersfield, October 14. The election of officers resulted as follows: President, Dr. J. L. Carson, Bakersfield; vice-presidents, Drs. Angus B. Cowan, and Joseph D. Davidson, of Fresno, and Henry E. Southworth, Stockton; secretary, Dr. William S. Fowler, Bakersfield; assistant secretary, Dr. Dwight H. Trowbridge, Fresno, and treasurer, Dr. Thomas M. Hayden, Fresno. A committee of three was appointed for the revision of the constitution and by-laws so that they will correspond with those of the American Medical Association.

LOW FEES.

KALAMAZOO, MICH., Oct. 27, 1902.

To the Editor:—I have read the letter in your issue of the 25th inst., entitled "Organization," by Dr. Todd. It is a fact that the members of the medical profession receive smaller fees than those of any other profession. Why is this so? In my experience I have found very few physicians who know much about business, and I believe this is the trouble. I have known men who belong to medical societies which have a fee bill but who do not adhere to it. I know physicians with excellent reputations who examine a patient and furnish medicine for the "exorbitant" price of thirty-five pennies. I do not pretend to say all physicians do this, but you will find only occasionally a man who charges enough. The problem is: How are we to remedy this evil?

Certainly most patients do not give credit for small charges. The quacks get large fees for trivial things, and the patients say: "He did me good."

Several years ago I knew a physician who attended a case of fracture of the femur; his fee was $100, and he got it. The patient was perfectly satisfied until a brother practitioner told him it was far in advance of the regular fee. When physicians are continuously knocking each other what can we expect from our patients and what fees can we expect to receive? Just as long as this state of affairs exists the medical fees will be small and quacks increase. G. C. McVoy.

GARLAND COUNTY HOT SPRINGS MEDICAL SOCIETY.

We are pleased to announce that the Hot Springs Medical Society, at its last meeting, September 18, adopted the constitution and by-laws as formulated by the committee of the American Medical Association for the organization of county societies. The society will be known as the Garland County Hot Springs Medical Society, and every effort will be made to increase its membership by the addition of desirable and eligible men located in the county. The society hopes through indefatigable efforts to make itself a credit to the state and to the national society and thus through its merits as worker receive the support of the medical profession throughout the country.—*Hot Springs Medical Journal*, October.

UNION OF TWO OPPOSING ORGANIZATIONS.

The physicians of Rock Island, Ill., have been seriously divided through rival organizations—the Rock Island County Medical Association and the Rock Island County Medical Society. For some time unsuccessful efforts were made to unite the factions, but last week the union was brought about through the personal efforts of the president of the state society, Dr. M. L. Harris. The two old societies disbanded and a new body, to be known as the Rock Island County Medical Association, was organized, all the members of the old organizations going into the new as charter members. The officers elected are: President, Dr. Albert M. Beal, Moline; vice-presidents, Drs. William R. Freek, Cordova, and Arthur D. West, Moline; secretary, Dr. Emma Morgan, Rock Island; treasurer, Dr. Louis Ostrom, Rock Island, and official reporter, Dr. George L. Eyster, Rock Island. The physicians of Rock Island County are to be congratulated on the happy outcome, and as the county is one of the important ones in the state, a large, active and successful organization may be looked for.

Societies.

COMING MEETINGS.

Oklahoma Territory Medical Association, Guthrie, Nov. 11, 1902.

Southern Surgical and Gynecological Association, Cincinnati, Nov. 12-14, 1902.

Tri-State Medical Society of Mississippi, Arkansas and Tennessee, Memphis, Tenn., Nov. 11-13, 1902.

Indian Territory Medical Association, Muskogee, Dec. 2-3, 1902.

Western Surgical and Gynecological Association, St. Joseph, Mo., Dec. 29, 1902.

Brookfield (Mass.) Medical Club.—This club held its annual meeting at Warren, October 15. Dr. Frederick W. Cowles, West Brookfield, was elected president; Dr. James C. Austin, Spencer, vice-president, and Dr. William F. Hayward, East Brookfield, secretary and treasurer.

Detroit (Mich.) Academy of Medicine.—At its annual meeting, held at the residence of Dr. Arthur D. Holmes, the academy elected Dr. Robert W. Gillman, president; Dr. Alvah N. Collins, vice-president; Dr. Harrison D. Jenks, secretary-treasurer, and Dr. Leartus Connor, director.

Cheshire County (N. H.) Medical Society.—The annual meeting of this society was held at Keene, October 14. Dr. James A. Craig, Westmoreland, was elected president; Dr. Frank M. Dinsmoore, Keene, vice-president, and Dr. Charles W. Harrington, Peterboro, secretary and treasurer.

McDonough County (Ill.) Medical Society.—This society held its annual meeting in Macomb, October 7. The following officers were elected: Dr. Henry Knappenberger, president; Drs. Samuel C. Stremmel and Robert E. Lewis, vice-presidents, and Dr. Arthur D. Pollock, secretary and treasurer, all of Macomb.

Marion County (Ore.) Medical Society.—The physicians of Marion County formed a county medical society, October 18, and elected the following officers: President, Dr. Calvin S. White, Gervais; vice-president, Dr. Charles H. Robertson, Salem; secretary, Dr. W. C. Smith, Turner, and treasurer, Dr. Mary M. Staples, Salem.

Strafford District (N. H.) Medical Society.—This society held its annual meeting for the election of officers and business at Dover, October 8. The following officers were elected for

1903: President, Dr. John H. Neal, Rochester; secretary, Dr. Louis W. Flanders, Dover; treasurer, Dr. A. Noel Smith, Dover, and auditor, Dr. Allen P. Richmond, Dover.

El Paso County (Texas) Medical Society.—The fourth annual meeting and banquet of this society were held in El Paso, October 11. Dr. Walter N. Vilas officiated as toastmaster, and was also elected president; Dr. Augustus L. Justice was elected vice-president; Dr. Junius A. Rawlings, re-elected secretary, and Dr. Gottlieb Wehrle, treasurer, all of El Paso.

Rice County (Minn.) Medical Society.—The physicians of Rice County held a meeting in Faribault, October 2, and organized this society, and elected officers as follows: President, Dr. Francis M. Rose, Faribault; vice-presidents, Drs. William A. Hunt, Northfield, and Roscoe N. Jackson, Faribault; secretary, Dr. Fred Huxley, Faribault, and treasurer, Walter H. Robilliard, Faribault.

Ionia County (Mich.) Medical Society.—This society was organized, October 8, at Ionia, with the following officers: President, Dr. Charles S. Cope, Ionia; vice-presidents, Drs. Fred L. Morse, Sebewa; William H. Flint, Clarksville, Charles B. Gauss, Palo, and William A. Wilkinson, Orleans; secretary, Dr. Frank W. Braley, Saranac, and treasurer, Dr. George A. Stanton, Belding.

Central Indiana Medical Association.—This association was incorporated at Anderson, October 22, with a capital stock of $2000. Its object is, among other things, the publication of the *Central Indiana Medical Journal*. The officers are: President, Dr. John W. Hunt; vice-presidents, Drs. William J. Fairfield and Horace E. Jones; secretary and treasurer, Dr. Samuel C. Norris.

Jackson County (Mo.) Medical Society.—This society met at Kansas City, October 9, and elected the following officers for the ensuing year: President, Dr. Walter S. Wheeler; vice-president, Dr. James W. Parker; secretary, Dr. Edward H. Thrailkill; treasurer, Dr. Louis W. Luscher; censor, Dr. William F. Kuhn; and librarian, Dr. Maggie L. McCrea, all of Kansas City.

Military Tract (Ill.) Medical Society.—This society held its annual session in Monmouth, October 16 and 17, and was the guest of the physician's club of that city. The following officers were elected: President, Dr. James E. Coleman, Canton; vice-presidents, Drs. Harrison C. Hopper, Galesburg, and William S. Holliday, Monmouth, and secretary and treasurer, Dr. Charles B. Horrell, Galesburg, re-elected.

French Congress of Neurology.—The president of the next French Congress of Neurologists and Alienists is to be Francotte of Liège. It will meet at Brussels in August, 1903. The secretary-general is J. Crocq of Brussels. The following questions will be discussed: "Histology of General Paralysis," address by Klippel; "Treatment of Insomnia and Agitation in Mental Diseases," address by Trenel, and "Administration of Insane Asylums," address by Claus.

Henry County (Ill.) Medical Society.—This society met for the first time since its revival, at Cambridge, October 7. Dr. John A. Kirkland, Cambridge, was made temporary chairman, and Dr. Harry W. Waterous, Galva, temporary secretary. Soon after the temporary organization had been effected the following officers were chosen to compose the permanent organization: President, Dr. Lemuel A. Ferry, Geneseo; vice-president, Dr. William H. Cole, Kewanee; secretary, Dr. Harry W. Waterous, Galva, and treasurer, Dr. John A. Kirkland, Cambridge.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Proceedings of the Twenty-eighth Annual Meeting, held at Kansas City, Mo., Oct. 15 to 17, 1902.

Under the Presidency of Dr. S. P. Collings, Hot Springs, Ark.

(Concluded from page 1067.)

Operations for Cancer of the Mouth and Neck.

Dr. George W. Crile, Cleveland, Ohio, delivered the address in surgery. His summary is as follows: In the past three decades there has been a continuous decrease in the operative mortality, and with a single exception of the brachiogenic cancers, even a more notable increase in the percentage of cures. The supreme importance of early diagnosis, and early and radical operation, is becoming widely recognized. Except in cancer of the upper jaw, the disease is now regarded as involving the *regional* lymphatic system and rarely extends to other parts of the body. Severing the thoracic duct causes but little disturbance, owing to its free anastomosis. The effect of resection of the internal jugular vein is practically *nil*. Unilateral resection of the vagus does not alter the heart's action, the respiration nor the digestion, but produces a permanent hoarseness only. Division of the superior laryngeal causes anesthesia of a part of the larynx, but pneumonia is improbable; division of the inferior laryngeal causes paralysis of the corresponding vocal cord; but interference with respiration is not marked; division of the spinal accessory has but slight effect on account of the double nerve supply to the sternomastoid, and the synergistic action of other muscles; division of the hypoglossal causes temporary interference with speech and swallowing, but compensation occurs; the submaxillary and salivary glands may be removed without symptoms; the removal of the sternomastoid muscle is not followed by torticollis, etc., on account of the synergistic action of other muscles. The complete removal of the lymphatic system of one side does not produce pseudo-elephantiasis of the face and head. Permanent closure of the external carotid has an operative mortality of 1 to 2 per cent., due to thrombosis and embolism. Permanent closure of the common carotid or internal carotid is attended by an operative mortality of about 3 per cent., but in the cancer period of life from 20 to 30 per cent. of cerebral complications follow, about 50 per cent. of which prove fatal. Temporary closure of the carotid by means of a special clamp, as shown in the writer's 43 cases, in which neither death nor cerebral complications occurred, is both efficient and safe. These physiologic and clinical data lead to but two objective points in unilateral operations for cancer of the mouth or neck, namely, complete removal of the disease and *preservation of the blood supply to the brain. If necessary*, sacrifice every other structure between the skin and the place of the deep muscles of the neck. Loss of blood is the greatest operative difficulty and danger. If hemorrhage is likely to be considerable, the common carotid should be closed during the operation. In the mouth cases, an anesthetic may be administered through rubber tubes passed through the nostrils to the level of the epiglottis, with the tongue well drawn forward. The pharynx may then be packed with gauze, so as to form an air-chamber in the lower larynx effectively, and prevent blood from entering the pulmonary tract. The dissection should be made on the same plan and as thoroughly as in the radical operation for cancer of the breast. The greater ease and certainty with which diagnosis may be early made in this region, the rarity of extension of the disease beyond the glands of the neck, should enable the surgeon to obtain even better results here than in cancer of the breast. The hope of the patient lies in early diagnosis, early operation, and a logical technic.

Cancer and Strictures of the Rectum.

Dr. Emerson M. Sutton, Peoria, Ill., read a paper on cancer of the rectum and reported cases.

Dr. Emil Ries, Chicago, pointed out the difficulties in treating rectal strictures. He referred to septic conditions, anatomic changes and the danger of recurrence.

Ureteral Catheterism; Its Value in Male and Female.

Dr. Bransford Lewis, St. Louis, read a paper on this subject, which will appear in The Journal.

Dr. B. F. Gillmer, Creston, Iowa, discussed the mechanical problem of intubation and emphasized the importance of acquiring manual familiarity with instruments.

Laminectomy for Fracture Dislocation of Vertebrae.

Dr. Joseph Rilus Eastman, Indianapolis, said that laminectomy for fracture or dislocation should be made early. The longer pressure had existed, the more extensive the degeneration of the cord. Laminectomy per se is not dangerous. It represents the surest method of diagnosis of fracture-dislocation, and the most rational and efficient means of relief.

Extrinsic Traumatisms of the Spine.

Dr. Thomas H. Manley, New York, said that the most frequent injuries were external to the spinal cord. They are rarely of such a character as to seriously impair function, although deformity and impairment of strength occasionally follow. No serious effort had yet been made by an American author to classify the pathology, to elucidate symptoms, or to establish the differential diagnosis in this important group of traumatisms.

Spinal Concussion.

Dr. Carl E. Black, Jacksonville, Ill., took the position that minute or capillary hemorrhage was the basis of most, if not all of these cases, and gave the following classification of injuries produced by concussion of the spine: Primary effects, 1, sprains; 2, contusion of the spinal cord; 3, minute hemorrhage into or around the cord. Secondary effects or complications, 1, shock or collapse; 2, acute hysteria; 3, neurasthenia; 4, chronic hysteria. He concluded: "It is certainly the duty of every surgeon to protect himself as well as any corporation he may represent, and the best interests of his patient, by distinguishing, if possible, between the purely psychical, secondarily psychical, and the truly pathologic condition, and treatment should be directed accordingly."

Dr. Frank Parsons Norbury, Jacksonville, Ill., also read a paper on this subject. Intramedullary hemorrhage was thought to be the immediate lesion. Most observers are inclined to the view that structural changes are probable, and that the degenerative and vascular changes, following injury to the cord, are indicated in the symptomatology. It is impossible to eliminate the psychic element. It is, therefore, important to recognize the definite and demonstrable symptoms—the symptoms which come on gradually, which in their entirety proclaim the hemorrhagic origin of the disease. The neuro-pathology of to-day is leaning toward the organic origin of many diseases heretofore regarded as functional. Concussion of the cord is one of the most marked of these diseases.

X-Ray Therapy.

Dr. Edwin Walker, Evansville, Ind., said that while the *x*-ray was of undoubted value in malignant growths, it should not be adopted to the exclusion of other known methods. Excision should be done, if possible, before the *x*-ray treatment was begun.

Dr. C. M. Mutz, Douglass, Kan., followed with a paper in which he dissented from the opinions of those who believed that the physiologic and therapeutic uses of the *x*-ray may be intelligently studied without reference to its nature or genesis. It was not a "giant in chains" which physicians needed to approach in fear when they would unchain it, but no physician, in his opinion, should be content to use a therapeutic agent without inquiry as to its exact nature and the elements of its entity.

Dr. J. Rudis-Jicinsky, Cedar Rapids, Iowa, said that three factors determined the special effect of the rays on the cell: 1, Condition of the body, i. e., the amount of resistance the rays encounted. 2. The amount and intensity of the rays. 3. The character of the rays. When the irritation was moderate, the cells might be stimulated, but if prolonged or given in excess, the change might be progressive in the tissues, leading to the so-called burn, regeneration, absorption, reabsorption, or to a total destruction of the cell.

Dr. Everett J. Brown, Decatur, Ill., reported cases and gave as the advantages of the *x*-ray treatment over surgery in many cases as: 1, painless; 2, non-use of anesthetics; 3, less destruction of tissue; 4, astonishing results in many cases regarded as incurable surgically.

Dr. Charles E. Barnett, Fort Wayne, Ind., read a paper on "Renal Calculi or Hepatic Calculi; Differential Diagnosis," saying the *x*-ray is not as valuable here as in other regions. It is impossible to make a differential diagnosis. He suggested cutting down and exposing the kidney, then being governed by the findings.

Dr. Herman E. Pearse, Kansas City, reported a case of cyst of the mesentery that recovered after operation. He stated that cysts of the mesentery are exceedingly rare.

Through-and-Through Intestinal Suture.

Dr. F. Gregory Connell, Leadville, Colo., said that a through-and-through suture should be employed in preference to one that attempted to perforate but a portion of the entire intestinal wall, because of 1, less danger of yielding; 2, less danger of leakage; 3, smaller diaphragm; 4, adhesions were diminished; 5, there was less danger of necrosis; 6, there was no foreign body, and 7, there was a decrease in time. The author closed with a description of the technic, and a report of fifty-four cases.

Gastro-Jejunostomy with the McGraw Elastic Ligature for the Relief of Gastroptosis.

Dr. H. O. Walker, Detroit, read a paper with this title, which will appear in The Journal.

Dr. John Young Brown, St. Louis, read a paper, in which he spoke of the value of vaginal section in selected cases of pus in the pelvis.

Cancer of the Uterus in the Mississippi Valley.

Dr. Emory Lanphear, St. Louis, said that eastern surgeons did not operate on cancer of the uterus, while western surgeons did. What was the result? The census statistics of 1900 showed cancer of the breast, on which all operated, east and west; cancer of the stomach, on which no one operated, and cancer of the uterus, as follows: East, cancer of the breast, 613 cases; cancer of the stomach, 1785 cases; cancer of the uterus, 1101 cases. Mississippi Valley, cancer of the breast, 874 cases; cancer of the stomach, 3776 cases, and cancer of the uterus, 679. The difference showed larger proportions of carcinoma uteri operated on in the west, with either a cure or return of the disease in other organs; hence death was not included in the deaths from cancer of the uterus. Reports from 74 operators in the Mississippi Valley showed 274 cases which had lived more than five years. The diagnosis was confirmed by the microscope in most cases, a result encouraging for earlier diagnosis and prompter hysterectomy.

A Plea for the Abandonment of the Abdominal Belt After Celiotomy.

Dr. Maurice Kahn, Leadville, Colo., read a paper on this subject. The application of an abdominal belt which, if tight enough to exert any influence, must relieve the muscles of their usual labor, results in the atrophy of non-use, whereas it would be desirable to have the hypertrophy of overuse. If it were possible to apply a belt internal to the abdominal wall, it might perhaps be of service in giving the cut edges an opportunity to firmly unite before any strain was imposed on them. Such arguments can not be advanced in favor of the external abdominal belt, which will not prevent the exertion of pressure on structures internal to itself. It has been his practice for over three years, after removing the first dressing, which was applied snugly for comfort and removed at the end of a fortnight, to allow patients to go without any support.

Early Diagnosis and Conservative Treatment of Fibromyomatous Tumors of the Uterus.

Dr. L. G. Bowers, Richmond, Ind., called special attention to the importance of the early diagnosis of fibroids, and pointed out that most of the literature dealt exclusively with the operative views, and nothing was said about preventive measures. The early practice of such treatment often obviated the necessity for hysterectomy.

Treatment of Fractures of the Patella.

Dr. David C. Peyton, Jeffersonville, Ind., discussed the contractions of the quadriceps as an efficient agent in the etiology, and outlined the advantages of treatment by open arthrotomy as compared with non-operative procedures.

Dr. Truman W. Brophy, Chicago, gave a lantern demonstration of his method of operating on cases of cleft palate.

Dr. C. E. Ruth, Keokuk, Iowa, discussed the subject of antistreptococcic serum in septic conditions.

Other papers read were as follows: "Smallpox," by Dr. John M. Batten, Downingstown, Pa. "An Attempt to Obtain Uniformly Active, Sterile and Non-irritating Preparations of Digitalis for Subcutaneous and Internal Administration," by Dr. E. M. Houghton, Detroit. "Some Developments in the Therapy of Iodoform," by Dr. J. J. Gaines, Excelsior Springs, Mo., who regards iodoform as the best remedy for tuberculosis. "Normal Sleep vs. Drug Unconsciousness," by Dr. J. B. Larned, Northampton, Mass. Brain and muscle employed in the open air alone during the day will secure normal conditions of sleep by night. Automatic brain activity at the sleeping hour is the immediate cause of wakefulness. "Treatment of Exophthalmic Goiter by Electricity," by Dr. H. M. Beaver, Spring Hill, Kan. He regards the disease as a vasomotor paralysis, hence it is amenable to electric treatment. "Climatic and Electric Peculiarities of Colorado Favoring Recovery in Pulmonary and Intestinal Diseases and from Surgical Operations," by Dr. J. E. MacNeill, Denver. "Childhood Insanities," by Dr. W. B. Fletcher, Indianapolis.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Fourteenth Annual Meeting, held in Washington, D. C., September 16 to 18, 1902.

The President, Dr. Edwin Ricketts, Cincinnati, in the Chair.

(Concluded from page 854.)

Some Problems in Exploratory Laparotomies.

Dr. Walter B. Chase, Brooklyn, said that in uncertain diagnosis from signs and symptoms surgical intervention is often necessary and a valuable diagnostic aid. Training and skill in diagnosis with good judgment would enable one to make an exploratory section in proper cases.

Tetanus Following Abdominal Section.

Dr. Walter B. Dorsett, St. Louis, detailed cases of tetanus due to infected ligatures used in ventrofixation of the uterus. He said there was a widespread belief among the laity that deaths following laparotomies and other major operations were due to the operation per se and not to the causes for which the operation was done. The sooner these false beliefs are eradicated the better both for the profession and the public and the duty of the correction of this erroneous idea lies with the medical profession.

Treatment of Pelvic Abscesses.

Dr. Herman E. Hayd, Buffalo, N. Y., in this paper advocated vaginal incision and drainage to get rid of the free pus, which operation could be advantageously followed by abdominal section. The danger and risks associated with abdominal section in the presence of pus are by this procedure reduced to a minimum. Interesting cases were cited.

Celiotomy for Retroversion of the Uterus.

Dr. A. Goldspohn, Chicago, gave a résumé of the rationale and technic of bi-inguinal celiotomy for complicated aseptic retroversion of the uterus. The argument he advanced was that: 1. Surgical treatment can be consistently recommended for this disorder only, if it be not merely innocent of harmful effects to subsequent gestation and labor, but if its good results are also not frustrated by subsequent childbirth. 2. Most of the operations in vogue do not meet this more ideal requirement, nor have most of their sponsors aimed so high. 3. The round ligaments of the uterus are the only truly serviceable structures to deal with to get such results, because they alone, as a part of the uterus, undergo both evolution and involution with it during and after gestation. 4. The route by which to gain their serviceability best is by the inguinal canals. 5. With a proper technic, the lateral inguinal rings provide ample access for the intrapelvic work in complicated but aseptic cases, without cutting and without hernia following. 6. A table showing later results of about thirty-five new examined cases in addition to seventy-two cases previously reported, with no hernia in any of them. 7. All known cases of subsequent child-birth retained their uteri, etc., in pronounced anteversion and with good involution.

Some Cases of Appendicitis and the Lessons They Teach.

Dr. Miles F. Porter, Fort Wayne, Ind., reported eleven cases with comments thereon and urged that in cases in which germs are widespread no starvation treatment or other methods aside from operation can circumscribe these germs. He said that the sooner the case of appendicitis which was growing worse is operated on the better. No man can tell with certainty the conditions in the organ until he sees the pathologic changes that have obtained.

Difficulties of Diagnosticating Appendicitis.

Dr. William Wotkyns Seymour, Troy, N. Y., read this paper narrating four cases showing the difficulties of diagnosis.

Intrauterine Fibroids.

Dr. M. A. Tate, Cincinnati, Ohio, had collected 41 cases of "Intrauterine Fibroids Complicating Pregnancy and Retained Placenta Associated with Uterine Fibroids Complicating Pregnancy." Analyzing these 41 cases, the histories of which were not complete, in 6 cases the tumor became gangrenous; hemorrhage was a prominent symptom, in that it occurred in 18 cases; 3 polyps were expelled spontaneously; 7 polyps were removed; in 3 cases the polyp was not removed; in 10 cases the labor was normal; in 4 cases labor was difficult; in 2 cases the child had to be destroyed; 1 was a case of turning, and the other a breech; in 4 cases the tumor was discovered before, in all of the rest after labor; 4 cases were reported where labor set in before time; 2 were at the fifth and 2 at the seventh month. The following were the complications reported: septicemia, 8; measles, 1; puerperal mania, 1; retained placenta, 4 cases. Treatment mentioned: cold applications, ergot, iodids, whisky, vinegar cloths in the uterus, packing of uterus with gauze and removal of tumor.

Deciduoma Malignum.

Lewis S. McMurtry, Louisville, Ky., gave a résumé of the diagnosis, pathogenesis and pathologic classification of the disease, the latter being somewhat unsettled. The clinical disease presents a well-defined history, appearing after abortion or labor. Of 128 recorded cases 40 per cent. appeared after mole pregnancy.

Carcinoma of the Cervix Uteri.

Dr. L. H. Dunning, Indianapolis, Ind., read a paper on this subject in which he presented a summary of his 62 cases operated on by hysterectomy. These cases showed on applying the accepted test of time—5 years—that the author had had an encouraging number of cures; they also showed the desirability of early operative procedure. The operative methods employed were indicated and the author's views of the same were discussed. The essayist reported five cases of carcinoma of the cervix uteri which were alive five years after hysterectomy.

BUFFALO ACADEMY OF MEDICINE, SECTION ON MEDICINE.

Regular Meeting, held Tuesday, Oct. 14, 1902.

The Chairman, Dr. Albert E. Woehnert, presiding.

Jenner—His Works and Their Value.

Dr. George Dock, Ann Arbor, Mich., read a most entertaining and interesting paper on the works of Edward Jenner, and their value in the modern study of smallpox.

The writer, through the courtesy of Dr. William Osler, has been able to read some of the original pamphlets of Dr. Edward Jenner concerning his work and the controversies and inquiries concerning his discoveries. He stated that we should not judge this part of Jenner's work harshly in view of the lack of knowledge of pathology and microscopy of that time. He praised Jenner for his descriptive power in reciting the symptoms and progress of his cases, and for his indefatigable energy in defending his position against his many opponents. Jenner devoted twenty-two years to his investigation.

Up to Jenner's time every tenth death was due to smallpox, and one-fourth the population were disfigured by it. In Russia one-seventh of all the children died from this cause. England suffered many epidemics, and it was always accompanied by fear and pestilence.

In 1802 Jenner received a grant of £10,000 from Parliament for carrying on his work in vaccination, and in 1807 received a second grant of £20,000. He had as many as 300 applicants daily for vaccination, and that, in addition to the many letters which it was necessary for him to answer in view of the lack of medical journals of that day, may explain why he wrote so few articles. Dr. Dock then showed a copy of one of the original folios on Jenner's instruction for vaccination. In this note, among other things, he gave orders for cleanliness in the operation, and recommended that the abrasion be only slight. He recognized many cases of failure, but insisted on re-inoculation. When vaccination was successfully done Jenner believed that life-long immunity would follow.

After a historical résumé of the progress and results of vaccination in various countries, he said that we can not reckon on combating smallpox without Jenner's discovery, unless we pay a heavy penalty. Cleanliness alone is not protective. This was admirably demonstrated at Cleveland when the health officers sought to replace vaccination by disinfection of premises. The German government teaches that this disease may be combated by enforced and repeated vaccination until successful with stated repetitions of the procedure to maintain immunity.

In a democratic country like the United States general vaccination can not be accomplished, but he argued that general vaccination is a democratic institution, and is for the protection of the community. The supply of virus should be under government control, and not under commercial control.

DISCUSSION.

Dr. De Lancey Rochester deplored the question of commercialism in the manufacture of virus. He recalled a very good virus at one time obtained, and on its subsequent trial found by analysis that the second sample was inert. He favored state control of the manufacture of virus, and also that vaccination be done when no other infectious diseases are prevalent, and when the subject is in good health.

Dr. Henry R. Hopkins, president of the New York State Medical Society, regretted that a city of the importance of Cleveland should have a mayor who was not in favor of vaccination. A former health officer of Niagara Falls was opposed to vaccination. There is but one solution to the problem, and that is state control. There should be a national organization of sanitation—a Secretary of Health.

Dr. Irving P. Lyon stated that New York City makes its own vaccine virus. He was surprised that it could not be obtained in Buffalo, and stated that it could be obtained if a request were made on the New York Laboratory.

Dr. Charles G. Stockton felt that Dr. Dock was to be congratulated for bringing to the attention of the profession Jenner's work and its effect in so concise and able a manner. Too much missionary work in educating physicians and laymen can not be done to overcome the harm done humanity by the anti-vaccinationists.

Dr. Roswell Park stated that it should be of interest to know what was done toward the prevention of smallpox before Jenner's discoveries. He alluded to the inoculation of virus in the Orient, which was introduced into England by Lady Montague. He also briefly referred to the letters and correspondence of John Hunter and Jenner, his pupil. Hunter imposed many arduous labors on his servile pupil, Jenner, who often was repaid only by oaths. Jenner, at the solicitation of Hunter, procured for him many specimens which were added to the Hunterian collection.

Dr. Arthur W. Hurd referred to the aid which Thomas Jefferson, as President of the United States, gave the Boston physician who introduced vaccination in America. Jefferson had his household vaccinated.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Drugs Excreted by the Milk.

The following is a list of drugs which are excreted by the milk and which, consequently, affect the infant: Sulphur, rhubarb, senna, jalap, indigo, arsenic, bismuth, iron, mercury, potassium iodid, zinc, iodin, antimony, opium, oil of anise, oil of dill, garlic, castor oil, lead, oil of turpentine, oil of copaiba, all the volatile oils, magnesium sulphate, carbolic acid, quinin, strychnin and cascara sagrada. The elimination of these drugs by the milk is more liable to take place when the mother is in a disturbed condition physically and when the mammary glands are not in a normal condition. Consequently care must be observed in prescribing some of these preparations for the mother. For example, copaiba and turpentine will so affect the taste of the milk as to cause the infant to refuse the breast. Diarrhea may be produced in the infant by administering castor oil or other of the above purgatives to the mother, and the opium preparations will produce the opposite effect on the child through the mother's milk. It is said that sufficient action may be produced on the child by administering mercury, arsenic and potassium iodid to the mother.

Convulsions of Unknown Origin.

Perier, as noted in *Amer. Med.*, recommends the following treatment of convulsions in children:

1. Loosen the clothing so that the neck, thorax and abdomen are exposed, and lay the child on its back. If there is constipation, a rectal injection of oil, glycerin or soap should be given.
2. If there is indigestion, provoke vomiting by tickling the uvula and then give a purgative injection.
3. At the same time make the patient inhale a few drops of ether or chloroform from a handkerchief and then open the windows.
4. If the convulsions are prolonged, a hot bath or a mustard bath should be given; the patient should then be dried quickly in order to prevent a return of the convulsions, and a teaspoonful of the following solution should be given every hour:

℞.	Potassii bromidi			
	Sodii bromidi			
	Ammon. bromidi, āā	gr. viiss		50
	Syr. codeinæ	gtt. lxxv	5	
	Syr. aurantii	℥i	30	
	Aq. calcis	℥iii	90	

M. Sig.: One teaspoonful every hour.

If the child is unable to swallow the following may be given per rectum:

℞.	Moschus	gr. iii		20
	Chloralis hydratis	gr. ivss		25
	Camphoræ	gr. i		06
	Ovi vitelli	ʒiiss	10	
	Aq. destil.	℥iii	90	

M. Sig.: At one time as a rectal injection.

As a suppository the following may be used instead of the above:

℞.	Chloralis hydratis	gr. iii-x		20-65
	Olei theobromatis	ʒss	2	

M. Ft. suppos. No. 1. Sig.: As directed.

The child should not be left alone until he has come out of the convulsion, which is not definitely passed until he has voided urine; and then the cause should be looked for.

Scabies.

Balzer, according to *N. Y. Med. Jour.*, gives the following directions for the rapid cure of scabies: 1. Friction with soft potash soap containing a certain quantity of chalk or of the finest sand. This friction should be general and vigorous, and should last twenty minutes. 2. A bath for one hour during which the frictions are continued, after which the following is applied with friction:

℞.	Sulphuris	ʒii	8
	Pot. subcarb.	ʒi	4
	Adipis	℥iss	45

M. Ft. unguentum. Sig.: Apply locally.

This friction should be prolonged for fifteen or twenty minutes and the patient should remain smeared with the ointment until the following day. He takes a tepid bath to remove the ointment and the treatment is finished, and in most cases the patient is completely cured. In the hospital the clothes are disinfected. It is occasionally but rarely necessary to repeat the treatment two or three times.

When scabies is accompanied by pustular or other exudative lesions, the crusts must first be loosened and the secretions checked. For this, baths and moist applications are used.

When it is complicated by eczema, starch cataplasms, silver nitrate and zinc paste, to which has been added liquid storax or Peruvian balsam, may be used. The following ointment allays irritation:

℞.	Petrolati		
	Adipis		
	Lanolini, āā	ʒv	20
	Zinci oxidi	ʒiv	16
	Balsami Peruvian	gr. xv	1
	Menthol	gr. iv	25

M. Ft. unguentum. Sig.: Apply locally; or:

℞.	Amyli		
	Zinci oxidi, āā	ʒvi	24
	Petrolati	℥iss	45
	Liq. styracis	ʒi	4

M. Ft. unguentum. Sig.: To be applied locally.

These ointments are well tolerated and bring about a certain improvement in the lesions due to scabies, also more energetic ointments may next be employed to destroy the parasite.

The following preparation has been highly praised as a substitute for the sulphur preparations:

℞.	Beta naphthol	ʒss	2
	Petrolati	ʒx	40
	Saponis viridis	ʒv	20
	Adipis	ʒi	4

M. Ft. unguentum. Sig.: To be applied locally. This preparation is as efficacious as the sulphur ointment and is better tolerated by the skin; it is especially useful in children.

Balsams, as liquid storax and Peruvian balsam, have been largely used of late years and are very energetic and efficacious; but cases of poisoning have been noted when they have been used in too concentrated form, so they should always be diluted with a considerable quantity of petrolatum or oil:

℞.	Liq. styracis	ʒiii	12
	Petrolati	ʒx	40
	Olei olivæ	ʒx	40

M. Sig.: Apply locally; or:

℞.	Balsami Peruv.		
	Sulphuris precip., āā	ʒi	4
	Petrolati	ʒx	40

M. Sig.: For local application.

The Peruvian balsam may be applied dissolved in alcohol as follows:

℞.	Balsami Peruv.	ʒi	4
	Alcoholis	℥iiss	75

M. Sig.: For local application.

The following formulæ are also recommended in the treatment of scabies:

℞.	Ichthyol	ʒiv	16
	Glycerini		
	Aq. destil., āā	ʒvi	24

M. Sig.: Apply externally two or three times a day; or:

℞.	Potass. carb.	ʒss	2
	Sulphuris sublim.	ʒi	4
	Lanolini	℥i	30

M. Ft. unguentum. Sig.: Apply locally night and morning; or the following lotion may be used:

℞.	Hydrarg. chloridi corros.	gr. ii	12
	Alcoholis	ʒiii	12
	Ammonii chloridi	gr. xv	1
	Aquæ rosæ q. s. ad	℥iii	90

M. Sig.: Apply locally twice a day.

Bulkley recommends the following:

℞.	Sulph. sublim.		
	Olei cadini, āā	ʒii	8
	Cretæ prep.	ʒiiss	10
	Saponis viridis		
	Adipis, āā	℥i	30

M. Ft. unguentum. Sig.: Apply locally.

Schultze recommends the following, which is a modification of Pastav's formula:

℞.	Styracis liq.	℥i	30
	Spts. rectif.	ʒii	8
	Olei olivæ	ʒi	4

M. Ft. linimentum. Sig.: Apply locally.

Vertigo.

For the treatment of vertigo Professor Vires, in *Med. Press,* recommends special and general treatment. The special treatment should be directed to the different causes of vertigo when they can be traced to affections of which vertigo is but one of the symptoms, such as syphilis, malarial fever, gout, gastric affections, etc. As regards general treatment he recommends potassium iodid, ten to twenty grains a day for months, with periods of rest, during which quinin is administered. However, the quinin should be given only when other methods fail, as it affects the hearing and leads, if prolonged, to absolute deafness. About six or eight two-grain pills should be given daily for one week and then suspended for one week, after which the drug should be resumed for eight days, when a notable improvement takes place. Treatment should be continued in this manner until a cure is effected. Vertigo due to arteriosclerosis should be treated with small doses of potassium iodid as follows:

℞.	Pot. iodidi	ʒi	4
	Aquæ	℥x	300

M. Sig.: Two tablespoonfuls daily for three weeks in the month. At the same time three drops of a solution of nitroglycerin—1-100—might be given morning and evening, and a milk diet be prescribed for eight days every month, while laxatives should be given frequently. If tachycardia be present, one or two of the following pills should be ordered daily:

℞.	Ext. convallariæ	gr. ii	12
	Sparteinæ sulph.	gr. i	06

M. Ft. pil. No. i. Sig.: One such daily.

The insomnia is best treated with trional and edema of the limbs by theobromin, ten grains four times a day. If in spite of this treatment the edema persists and increases digitalis should be given and a milk diet instituted. A purgative of jalap and scammony should be prescribed once a week.

Medicolegal.

Power to Determine Standing of Medical College.—The case entitled Illinois State Board of Health vs. The People was instituted under the statute of 1887 providing (Section 2) that the State Board of Health "shall issue certificates to all who furnish satisfactory proof of having received diplomas or licenses from legally chartered medical institutions in good standing, as may be determined by the board." Prior to 1890, the board adopted a resolution that medical colleges in good standing under the first section of this statute, which contained a provision substantially the same as that quoted, with reference to applicants who relied on a diploma, was thereby defined to include only those colleges which should, after sessions of 1890-91, require four years of professional study. A diploma dated March 22, 1894, was presented. The defense was that the institution which granted it was not, at the time the diploma was issued, a medical institution in "good standing," within the meaning of the statute above quoted from, as determined by the board of health—in that students therein were required to take a regular course of study of only two years, instead of four years as required by the rules and regulations of the board. Now, the Branch Appellate Court of the First District of Illinois holds it to be undoubtedly the law that the State Board of Health is possessed of discretionary power to determine whether a medical college is in "good standing," within the meaning of the statute and as defined in its resolution above mentioned, and that when the board has determined that question in favor of the applicant, it has exhausted its discretion, and may not refuse a license for arbitrary reasons of its own. But it appeared most satisfactorily that the refusal to grant the license in question was because the institution granting the diploma was not in "good standing" within the rules adopted by the board. If there was in the record anything which showed that the institution had brought itself within the statute subsequent to the issuance of the diploma in question, it was immaterial for the purposes of this case. The question here was whether the medical institution was in good standing at the time the diploma was issued, and that inquiry, on investigation, had been answered by the State Board of Health adversely to the applicant, and was not subject to review by mandamus proceedings.

Competency of Expert—Irresistible Impulse—Sanity.—The Supreme Court of Florida says, in Davis vs. State, that it is the province of the trial court to determine whether or not a witness offered as an expert has such qualifications and special knowledge as to make his opinions in answer to hypothetical questions admissible, and the decision of the trial judge is conclusive on this question, unless it appears on the evidence to have been erroneous, or to have been founded on some error in law. Some courts hold that the trial judge has a discretion not subject to review in passing on the facts relating to the qualifications of a witness offered as an expert, but a discretion of this nature can not be admitted to exist in the jurisprudence of this state (Florida). The qualifications necessary to enable witnesses to testify as experts are prescribed as well as ascertained by rules of law, and, if these rules are violated by the trial judge, his action will be erroneous, and subject to review. The question whether a particular witness possesses the necessary legal qualifications of an expert is a question of fact to be determined by the trial judge from testimony bearing on that question, and, if he clearly errs in his decision on this question of fact, his decision will likewise be erroneous, and subject to review. Of course, his decision on such question of fact will be entitled to weight in the Appellate Court, because of the superior advantages possessed by the trial judge, who hears the testimony and observes the witnesses; and his decisions will not be pronounced erroneous unless they are clearly so. He must decide the question of fact as he would other questions of fact arising for his decision on the trial, and his decision will be given due weight; but if he has erred in matter of law, or if his decision on the evidence is clearly erroneous, it is subject to review and control by an Appellate Court. Then the court says that the doctrine of "'irresistible impulse" does not obtain in Florida, and such impulse is not recognized as affecting responsibility for a crime committed by one who has sufficient mental capacity to distinguish between right and wrong with respect to the particular act, and who knows that he is doing wrong when he commits it. Sanity being the normal condition of man, when charged with crime he is presumed to be sane, and the mere fact of the commission of the crime is not in itself sufficient to overcome this presumption. It was not sufficient that the accused in this case was insane before or after, or both before and after, the firing of the fatal shots, but he must be insane at that particular moment. If, however, insanity of a permanent type or continuing nature, or characterized by an habitual and confirmed disorder of the mind, not temporary or occasional, were shown to have existed prior to the commission of the act, it would be presumed to continue up to the commission of the act, unless the presumption were overcome by competent testimony.

Unauthorized Pesthouse.—The Court of Appeals of Kentucky says that the case of Arnold vs. the City of Stanford was brought to recover damages because the city, it was alleged, located a pesthouse for the treatment of smallpox patients so near the house of the party suing, within the city, as to endanger the lives of himself and his family and to render his home uninhabitable. However, it was not alleged that the city, by action of its council, in adopting an ordinance or resolution to that effect, directed the act complained of, or that the council, by ordinance or resolution, ratified the act. And the court says that in such matters a city acts by its council only. Neither the individual acts of the members (though all may have favored the act), nor of its ministerial officers, unless ratified by council in session, should bind the municipality. Until so adopted or ratified, the act remains as that of the individuals perpetrating it only. Moreover, this was a city of the fifth class, and cities of the fifth class in Kentucky are not empowered to establish or maintain pesthouses or hospitals for the treatment of eruptive diseases. The fact, the court says, that the legislature, at a session when the statutes governing cities of the various classes were passed, gave the power specifically to some cities, and did not mention it when treating of the powers of others, in which their powers were enumerated with particularity, indicated a legislative determination to withhold the power where it was not expressed. Again, it says that Section 3909 of the Kentucky Statutes forbids the location of a pesthouse for the treatment of eruptive or contagious diseases within the corporate limits of any incorporated city, or within a mile of the boundary line thereof. The same section provides a penalty against the officer or person who shall violate the section. In the absence of any other statutory regulation, this would seem to be an express prohibition against the city's maintaining or erecting the pesthouse within its corporate limits. Should the council attempt, even by ordinance, to do so, the ordinance would be void. They could not bind the city by it. Where officers of the city, with or without the protection of an ordinance, should do an act expressly prohibited by statute, such an act would not be within the scope of their official duty, or would be *ultra vires,* as it is called. The city can not be bound thereby. The act sued for was a nuisance under the facts stated. But not being the act of the city, it was the act of those who actually set up and maintained the pesthouse. It was thus a private nuisance, of the same legal character that the establishment of a slaughterhouse by individuals might be. It was admittedly true that the city could, by ordinance and prosecution, so punish perpetrators of nuisances within its jurisdiction as to prevent them. For a failure to enact and execute such ordinances, would the city be liable? The court is of the opinion that it would not. It would be a failure to discharge its political duties, for which it would not be liable to a suit at law. Wherefore, the court is of the opinion that the petition failed to state a cause of action against the city in this case.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal, October 18.

1 *Shoe Deformities. E. H. Bradford.
2 *The Treatment of Prolapse of the Rectum. Joseph M. Mathews.
3 The Evolution of Urology. (Concluded.) Ramon Guiteras.
4 *The Clinical Value and Treatment of Atonic Dilatation of the Stomach. B. C. Loveland.
5 *Observations on Muscular Relaxation in Its Relation to Women's Diseases. D. Ernest Walker.
6 Studies in Stethophonometry. Albert Abrams.
7 A Case of Acute Diabetes in a Child Three Years of Age. Frank B. Swartzlander.

Medical News (N. Y.), October 18.

8 *The Huxley Lecture on Recent Studies of Immunity, with Special Reference to Their Bearing on Pathology. William H. Welch.
9 *Drug Habit: Review of Articles by Drs. Hare and Lott. George E. Pettey.
10 Polyhydramnios: Its Differential Diagnosis and Treatment, with the Report of Cases. Edward P. Davis.
11 *Recent Discoveries in the Domain of Etiology. D. H. Bergey.

Medical Record (N. Y.), October 18.

12 *Statistical Report on Creosote in Pneumonia. I. L. Van Zandt.
13 *The Results of Treatment of Laryngeal Cancer by Means of the X-Ray. D. Bryson Delavan.
14 *Varicocele. Charles Chassaignac.
15 The Early Diagnosis of Pulmonary Tuberculosis. Seale Harris.
16 *Some Reflections on Cases of Acute Intestinal Obstruction. H. Beeckman Delatour.
17 *Dulness in Appendicitis. H. T. Miller.
18 The Doctor and the School Teacher, Can They Not Work More in Harmony? Richard C. Newton.
19 Foreign Bodies Accidentally Left Within the Abdominal Cavity; How to Prevent the Occurrence. Howard Lilienthal.

Boston Medical and Surgical Journal, October 16.

20 *Annual Oration Before the Maine Medical Association. James R. Chadwick.
21 *Pelvic Cellulitis as a Complication of Uterine Fibroids. A. T. Cabot.

Philadelphia Medical Journal, October 18.

22 *Hodgkin's Disease, with the Report of a Case. Thomas C. Ely.
23 Infantile Scurvy; Report of a Case, with Fracture of the Femur, and Multiple Epiphyseal Separations. Theodore S. Elterich.
24 *Acroparesthesia. Frank R. Fry.
25 Tent Life in Arizona in the Treatment of Tuberculosis. Henry H. Stone.
26 Littoral California. (Continued.) William A. Edwards.

American Medicine (Philadelphia), October 18.

27 *Ruptured Pus Tubes Charles G Cumston.
28 *Pericarditis as a Terminal Infection of Chronic Bright's Disease Herman B. Allyn
29 *The Discovery of Astigmatism and Eye Strain. George M. Gould
30 *Types of Infection Produced in Man by Intermediate Members of the Typhoid Colon Group of Bacilli. (Concluded.) Warren Coleman
31 Laryngeal Symptoms Complicating a Case of Purpura Hemorrhagica Joseph S Gibb
32 Heatstroke Followed by Non-Fatal Lightning Stroke: Report of a Case with Sequels George H. Torney and William E Musgrave
33 A Case of Multiple Gunshot Wound of the Intestines; Laparotomy; Recovery E B. Marsh.
34 The Teaching and Practice of Surgery in the Vienna Allgemeine Krankenhaus. Nicholas Senn.

St. Louis Medical Journal, October 18.

35 Anasarca in Malaria F L Morse

Cincinnati Lancet-Clinic, October 18.

36 Surgery of Prostate Pancreas and Diaphragm (Continued) B Merrill Ricketts
37 *Multiple Infections Mark A. Brown.
38 *Green Drug Fluid Extracts C. S. Chamberlin
39 Severe Extrinsic Traumatisms of the Spine Thomas H Manley

American Practitioner and News (Louisville, Ky.), September 1.

40 Intestinal Obstructions: Report of Five Cases. August Schachner
41 Suggestive Therapeutics or Psychological Medicine Anna G Sedam
42 The Value of State Control and Vaccination in the Management of Smallpox J. N McCormack
43 The Influence of Contaminated Water in the Development of Diseases D G Simmons
44 *The Mammary Gland; A Plea in Equity. C. C. Lewis.
45 A Few Scattering Thoughts T. A. Frazer.
46 Errors of Diagnosis of Continued Fevers. Horace T. Rivers

Medical Fortnightly (St. Louis), October 10.

47 Emergency Surgery—Case Records Carl E Black.
48 A Note on the Spontaneous Fracture and Expulsion of Urinary Calculi Reginald Harrison
49 The Technic and Possibilities of Endovesical Operative Procedures Louis E Schmidt.
50 Hypnotics in General Medical Practice. S. E. Luckett
51 Puerperal Tetanus Report of a Case. E. W. Crum

Pediatrics (N. Y.), October 1.

52 The Surgery of Those Affections of the Cerebrospinal Nervous System Which Occur More Especially in Children. Harold J Stiles

October 15.

53 *On Defective Coordination in Utero, as a Probable Factor in the Causation of Certain Congenital Malformations. John Thomson
54 A Note on the Surgical Treatment of Spastic Infantile Paralysis Robert Jones
55 Enlarged Faucial and Pharyngeal Tonsil; Granular Pharyngitis Samuel G Dabney.

Virginia Medical Semi-Monthly (Richmond), October 10.

56 Some Benefits of Thorough Organization of the Medical Profession, Both to the Laity and Profession; With Mention of Some of the Most Prevalent Causes of Sickness, Race Decay, and Their Prevention. R. S. Martin.
57 *S[illegible] uette H. Plympton.
58 [illegible] sted by a Case of Urinary Fistula Fol[illegible] ysterectomy. J. W. Henson
59 [illegible] a Acute Exte[illegible] in Men by [illegible] rating the Rectum from the [illegible] Puncture of the Recto Vesical [illegible] Hugh M Taylor
60 The Methods of Using Argyrol. A. C. Barnes
61 A Case of Volvulus, with Torsion of the Entire Mesentery G T Vaughan
62 Public Care and Treatment of Inebriety. T. D. Crothers.

Archives of Pediatrics (N. Y.), October.

63 *Diphtheria, with and without Antitoxin; 159 Cases. Charles G Kerley
64 *Some Remarks on Intubation in Diphtheria. John H. McCollom
65 Chronic Parenchymatous Nephritis in a Child Treated by Renal Decapsulation (Edebohls' Operation). Augustus Caillé
66 *Analysis of Human Milk the Basis of the Artificial Feeding of Infants Arthur V. Meigs.
67 The Effects of Acid Fermentation upon the Curd of Milk Walter G Murphy
68 *A New Sign of Pleuritic Effusion in Children Samuel W. Kelley

Occidental Medical Times (San Francisco), October.

69 On the Treatment of Paralytic Clubfoot S. J. Hunkin.
70 Medical Education William F. McNutt.
71 Primary Carcinoma of the Body of the Pancreas. Guido E Caglieri
72 Ankylostomiasis—Report of a Case Louis A. Kengla.
73 Insomnia. Francis Crosson.

New York State Journal of Medicine (N. Y.), October.

74 *A Review of Echinococcus Disease in North America Irving P Lyon
75 *Congenital Narrowness of the Aortic System Joseph Burke
76 A Durham Tube in the Right Bronchus. E D. Ferguson.

Maryland Medical Journal (Baltimore), October.

77 Addison's Disease, with the Aid of Tuberculin in Diagnosis Morris C. Robins
78 Report of a Case of Progressive Muscular Atrophy (Spinal), with Mental Symptoms R. Edward Garrett.
79 A Remarkable Case of Early and Continued Menstruation George Wells

Annals of Surgery (Philadelphia), October.

80 *Fatal Acetonemia Following an Operation for Acute Appendicitis. George E. Brewer.
81 Acute Suppurative Pancreatitis Francis W. Murray.
82 *Cholecystectomy vs Removal of the Mucous Membrane of the Gall-Bladder. Emil Ries
83 *Removal of the Bladder and Prostate for Carcinoma Through a Suprapubic Opening. Malcolm L Harris.
84 *Results of Operation on the Kidney for Tuberculosis Edgar Garceau
85 *Valve Formation in the Lower Portion of the Ureter. William E Morgan.
86 Excision of the Lumbar Lymphatic Nodes and Spermatic Vein in Malignant Disease of the Testicle John B. Roberts
87 Report of a Case of Gunshot Wound of the Thorax Involving the Heart. Levi J. Hammond.
88 *Measurements for Operating Distances in the Nose. Harris P. Mosher.
89 *Contribution to the Surgery of Cleft Palate Alexander H Ferguson
90 Total Excision of the Scapula, with Preservation of the Upper Extremity. Sidney P. Delaup.
91 A Further Note on Interscapulo thoracic Amputations Robert G. Le Conte
92 Operative Dislocation of the Head of the Femur in Tubercular Disease of the Acetabulum. Edward H. Bradford.
93 Contribution to the Pathology of Supra-acromial Dislocation of the Clavicle and Obturator Dislocation of the Hip. Percival R. Bolton.
94 A Case of Trigger Fingers. Frederic Griffith.
95 The Hartley-Krause Flap in Hemorrhage from the Middle Meningeal Artery. Samuel C. Plummer, Jr.

American Medical Compend (Toledo, Ohio), October.

96 Double Vagina, Complete Prolapsus of the Uterus and Vagina with a Growth Which Involved the Cervix. E E. Montgomery.
97 Position and Topography of the Ureteral Calyces and Pelvis Byron Robinson
98 Army Hospitals, Past and Present. E. B. Tucker.
99 How to Assist Young Girls to Womanhood. Edward C. Hill

Annals of Otology, Rhinology and Laryngology (St. Louis), August.

100 The Present Status of the Knowledge of Otogenous Pyemia Dr. Jansen.
101 The Nature of Disc[illegible] Wyatt Wingrave.
102 Three Cases of [illegible] for Double Mastoid Abscess Char[illegible]
103 [illegible] ert C. Myles.
104 [illegible] L Van Sant.
105 *[illegible] of the Throat and Ear; Some [illegible] Pessimist. Thomas J. Harris
106 [illegible] Case of Thyroid Gland Tumor in the Larynx Walter A. Wells.
107 Report of an Accident with a Tracheotomy Tube. Charles N. Cox.
108 *A Physiolog[illegible] atory of Some of the Symptoms of [illegible] illiam L. Ballenger.
109 The Surge[illegible] Otorrheal Patients. B. F. Church.
110 *The Treatment of Laryngeal Papillomata, with Report of a Case. Dunbar Roy.
111 Epithelioma of Middle Ear. W. H. Haskin.
112 Hydrobromic Ether; Notes upon Its Use as an Anesthetic in Adenoids and Tonsil Operations. D. J. Gibb Wishart.
113 *The Protection and Preservation of the Labyrinthine Wall, with Reference to the Prognosis for Hearing in Radical Tympano Mastoid Exenteration. Redmond Payne.
114 Report of a Case of Rapid Necrosis of the Temporal Bone Following Scarlet Fever. Francis R. Packard.
115 *The [illegible] Important Factor in the Prevention of [illegible] M. Pottenger.
116 [illegible] Following an Adenotomy. J. M. Ingersoll.
117 A Case of Epithelioma of the Auricle and Auditory Canal. Thomas R. Pooley.
118 Supposed Cavernous Sinus Thrombosis. Ewing W. Day.
119 Tumor of Cerebellum Ewing W. Day.
120 A Foreign Body in External Auditory Canal Simulating a Sequestrum W. H. Roberts.
121 *Some Observations on Operations for Malignant Disease of the Mouth and Neck. George W. Crile.
122 Pharyngitis Lateralis Hypertrophica. Fred Baker.
123 Polypi of the Antrum. Robert C. Myles.

Indiana Medical Journal (Indianapolis), October.

124 A Case of Cretinism Treated with Thyroid Gland. Ezra O. Price.
125 Atrophic Rhinitis. John J. Kyle.
126 An Adherent Cutaneous Exanthem; Probably Duke's "Fourth Disease" Edgar F. Kiser.
127 A Case of Hydracyanic Acid Poisoning. Ira E. Cox.

American Journal of the Medical Sciences (Philadelphia), October.

128 *Two Conditions Simulating Ectopic Gestation. Edward P Davis

method of estimating and correcting astigmatism has been largely due to Philadelphia specialists, as also the bifocal spectacles which were first invented by Benjamin Franklin, and the perfecting and making practical the art of retinoscopy, and the recognition of the pernicious influence of eye-strain on the digestive and assimilative system, are all due to Philadelphians. The evil physiologic influence of eye-strain was also first pointed out by a Philadelphia oculist in 1888. Other points mentioned are repression of unprofessional methods, the operative manias of the tenotomists, etc. He remarks in conclusion that there is a genuine significance in the term "Philadelphia School of Ophthalmology."

30. **The Typhoid Colon Group of Bacilli.**—In this third article of Coleman's, he notices particularly the psittacosis bacillus. He says while there has been no report of the disease in this country he thinks from the testimony of bird dealers, or something similar to it, must be common, though its communication to man has not been observed.

37. **Multiple Infections.**—Brown reports a case of syphilis co-existing with vaccinia, another of estivo-autumnal malaria and pulmonary tuberculosis; one of coincident whooping cough, acute inflammatory rheumatism and lobar pneumonia, and one of typhoid fever and simple tertian malaria.

38. **Green Drug Fluid Extracts.**—Chamberlin insists on the importance of securing the true active principle of vegetable drugs in fluid extracts. Some drugs suffer no deterioration if properly dried, and under proper conditions may be kept indefinitely. Others, while not injured in the drying process, are so subject to the attacks of insects and worms, that they soon become filthy and unfit for medicinal use. In others again certain volatile constituents on which the therapeutic value of the drug depends, are lost by decomposition and evaporation in the dried form, some instances of which he mentions: for example, the fluid extract of viburnum prepared from the dried plant as compared with the one from the fresh green bark, both in its physical characteristics and in its therapeutic properties. In some cases where the active principles are resinous in their nature, although in solution in the natural juices of the plant and at that time freely soluble in alcohol, they become hard and insoluble in even the most powerful solutions after the drug has been dried, as in the case of stillingia. Other instances are mentioned, and he quotes from the Public Analyst of the State of New York, Scudder, Marion-Sims and others in support of these views. The medicinal properties of plants are, to a considerable extent, complex and unstable organic bodies. In making the extracts, therefore, he says we should be careful to have them made from substances in which all the virtues are still retained.

44.—See abstract in The Journal, xxxviii, p. 1390.

53. **Congenital Malformation.**—The title of Thomson's paper gives his subject. The special forms of anatomical abnormalities he mentions which are mainly due to muscle hypertrophy without any apparent organic cause, such as congenital hypertrophy of the bladder, colon, pylorus, and stomach wall, are, in his opinion, due to overwork in fetal life. He thinks that the bladder, bowel and stomach are developing, gaining both strength and precision during the latter months of pregnancy and might be liable to temporary functional derangement. As regards congenital hypertrophy of the pylorus he remarks that it would seem possible that this is often transitory and functional, from the gradual disappearance of symptoms in some cases in which there is reason to believe that the anatomical condition remains the same.

57.—This article has appeared elsewhere. See The Journal of October 25, ¶36, p. 1072.

63. **Diphtheria.**—Kerley has treated 159 cases of diphtheria altogether, 42 intubation cases; 103 were treated without the use of antitoxin. Of these 60 died and 43 recovered. Of the 56 treated with antitoxin there were 41 non-operative cases with 1 death, and 15 operative cases with 3 deaths. One of the fatal operative cases was injected with too small an amount of antitoxin. The others were treated late in the disease. The only fatal non-operative case was given 1000 units on the fourth day of illness and died on the eighth day. It was his first experience with antitoxin. He would establish the following principles: "With visible membrane, inject at once, and take a culture. In croup, inject if there is inspiratory and expiratory obstruction. The patients should be seen at twelve-hour intervals. Reinject in twelve hours if the patient is not improved or if improvement is not marked. If continued improvement does not follow, reinject at twelve-hour intervals until the membrane disappears."

64. **Intubation.**—McCollom finds that since the South Department of the Boston City Hospital has been open there have been 1200 intubations. The death rate, including all cases, was 40 per cent. Eliminating the deaths caused by diphtheritic paralysis, the death rate was 30 per cent. Eliminating the moribund cases dying a few hours after admission, the death rate was 25 per cent. This is lower than that of the London and Glasgow hospitals, and he thinks it is due to the fact that here they operated early, and gave large doses of antitoxin. He finds, according to his experience, intubation is available in the adult, and he has used it in the case of a man of 60 years of age with less difficulty than would have been met with in tracheotomy. The length of time the tube stays in is varied. He generally takes it out at the end of three or four days, and it does not often have to be returned. The most favorable thing to happen is for the child to cough up the tube at the end of forty-eight hours and have no return of laryngeal stenosis.

66. **Human Milk.**—Meigs thinks that human milk should be the basis of artificial feeding, and recalls his method of analysis published some twenty years ago, and his conclusion that human milk never contains more than 1 per cent. of casein. He thinks this should be tested at the present time, for if this is correct subsequent analyses are incorrect, and it would prove that his analysis in regard to the invariably low per cent. of casein was also correct. Second, it is worth while to test whether it is better to have the strength of the infant food increased at varying intervals, or, as is advised by him, to keep the strength the same for eight or nine months, but increase the quantity.

68. **Pleuritic Effusions.**—A new sign, here described by Kelley, is as follows: "In the course of symptoms which indicate the early stage of pleurisy, among which is the attitude of lying on one side or bending toward, or pressing on one side—this position changes, and the patient instinctively turns and prefers to lie on the back or to be propped up high in bed, and avoids bending toward that side or pressing on it. This is a sign of effusion—probably of an effusion of considerable bulk, and poured out with a degree of rapidity." He has observed this again and again, and while he is not prepared to say that it is always present he believes that it is as reliable as other symptoms. He asks does it indicate anything more than an effusion or is it a symptom of consolidation of the lung, which he does not believe. Whether it is present in adults he can not say. He has only observed it in children.

74. **Echinococcus Disease.**—This article is intended to give the statistics of hydatid disease in the United States and Canada collected from the literature and other sources up to July 1, 1901, including the reviews given by Osler and Sommer in earlier publications. Lyon finds a total of 241 cases, 91 per cent. being in foreigners. Of the native born, the larger quota was in the colored race. In Canada the proportion is large on account of the Icelandic immigrants of Manitoba. The question whether the disease is increasing can not, as Lyon thinks, be definitely answered at the present time. According to the Agricultural Department authorities it is undoubtedly on the increase in domestic animals. Echinococcus disease in man and animals is undoubtedly due to the ingestion in food and drink of the eggs of the *Tenia echinococcus*, a small tapeworm found in dogs and wolves. We can exterminate the disease by enforcing proper sanitary regulations at the slaughter houses and by burning of the larval cysts found in slaughtered animals, and thus preventing the infection of dogs and other animals. The practice of throwing out the offal of slaughtered animals should be prohibited by law. Dogs should be kept out of slaughter houses. At present the disorder is

rare, but it can be easily brought about by carelessness that it might be as serious a matter here as in Germany, the Argentine Republic and Australia.

75. **Congenital Narrowness of the Aortic System.**—Burke's conclusions are that, contrary to the assurance of many authors, we must admit that there is such a thing as narrowness of the aortic system as a cause of disease. As resulting phenomena we have first left-side hypertrophy of the heart, with subsequent dilation of the left ventricle and auricle, stasis phenomena in the lungs, hypertrophy of the right ventricle and when the course lasts sufficiently long, and the resisting power of the right ventricle becomes exhausted, dilation of the right ventricle occurs. In the arteries, we have arteriosclerosis in youthful individuals as an expression of an elevated blood pressure existing for a long time. As clinical phenomena we have paleness of the face, a feeling of constriction and oppression in the chest and dyspnea with cough and catarrhal expectoration, signs of hypertrophy, with dilation of the left ventricle and resulting insufficiency, enlargement of pulmonary limits and signs of stasis bronchitis, with increasing weakness of the right ventricle, enlargement of the liver, albuminuria, and edema. These symptoms depend more or less on circumstances such as sex, occupation, manner of living, and duration of the affection. In women anemias occur and the disturbance has its course under the picture of a primary anemia, chlorosis, or pernicious anemia, while secondary changes on the heart, as a rule, are not present. Probably the diminution of the blood quantity forms a compensatory element for the elevation of the resistance as given in aortic narrowness. In men the compensatory moment falls away, and the picture of the heart disease appears. Two causal possibilities exist: The one is a congenital condition, the other an arrest in growth of the vessel apparatus. The significance of narrowness of the vessels as a predisposing cause for infectious diseases must be admitted theoretically, in so far as it leads to a weakness of the body of the afflicted individual. The narrowness of the vessels appears, as Virchow has remarked, to act as a predisposing factor.

80.—See abstract in The Journal of July 5, p. 40.

83. **Cholecystotomy vs. Removal of the Mucous Membrane of the Gall-Bladder.**—Ries has studied the possibilities of the removal of the mucous membrane recommended by Mayo, and reports a case which seems to him to illustrate the possibility of serious objections. While in Mayo's operation no bad results have been reported, the time has yet been too short and the number of cases are not large. We have to take into account, as shown in his cases reported and illustrated, that the glands penetrate the mucous coat in some cases, and the possibility of the formation of retention cysts in the remnant of the gall-bladder, which would have the same pathology and clinical symptoms as a hydrops due to stricture of the cystic duct, after removal of the mucous membrane of the gall-bladder. He, therefore, thinks that it is a step in the wrong direction and should be abandoned in favor of the more radical, more reliable and hardly more dangerous operation of cholecystectomy.

83.—See abstract in The Journal of July 5, p. 39.

84. **Kidney Tuberculosis.**—Garceau has collected 194 cases in which the kidney was operated on for tuberculosis and has analyzed 415 cases altogether of kidney tuberculosis. He concludes that tuberculosis is rarely if ever primary, and the original focus is in some other organ in more direct contact with the external air in the majority of cases. The presence of a primary focus of disease in the body, even if the disease has been thoroughly eradicated from the urinary tract, makes the ultimate prognosis in these cases doubtful at least. Such tubercular foci may remain permanently quiescent, but may also become excited to activity by a generally low condition of the system, or by causes unknown to us. Patients should be told of the danger as regards the future, and should lead strictly hygienic and regular lives. Change of climate is often beneficial. Reported cures of long duration occur, but they have been few. Nephro-ureterectomy should be done in all cases in which the ureter is diseased and the patient's condition allows of it. The bladder should be subsequently treated if diseased. The abandoned tuberculous ureter is a special source of danger on account of the great liability of subsequent tuberculosis. Nephrotomy alone should be rejected except as a preliminary to a later nephrectomy. Resection is not justifiable, for we can never be sure that the portion removed is the only portion diseased.

85. **Valve Formation in the Lower Ureter.**—Morgan reports a case at length in which, through some local inflammatory action early in life, some small adhesive bands surrounded the ureter just under the cover of the tip of the seminal vesicle, binding the latter to the ureter and to the bladder. These impeded, but did not totally obstruct, the flow of urine for many years, but led to the gradual formation of a pouch, which became of such a size as to make a sharpened angular deformity at the place of most dense adhesion. This led to a valvular mucous fold which intermittently completely shut off the ureteral current. The operation was a serious one, and the diagnosis difficult. He remarks that with his experience in this case he thinks that the route followed by the lumbar incision in the rear and exploring the ureter downward is an ideal one. Great care must be had for the peritoneum and the spermatic cord must be protected.

88. **Nose Measurements.**—Mosher has measured a large number of heads to get an idea of the operating distances in the nose, which he illustrates by diagrams and schematic cuts, which would require their repetition to convey a correct idea. He also measured dried skulls for comparison. He remarks that in taking measures of the floor of the frontal sinus we are struck with the fact that if a burr is entered at the upper end of the infundibulum and passed directly upward in order to open the frontal sinus, it will in the majority of cases enter the cranial cavity. This is due to the frequent sharp slope forward of the posterior wall of the sinus. In order to enter the sinus at this point, the burr should point forward at an angle of 45 degrees, and would have a working distance of half an inch. In order to bore straight up into the sinus the probe must be held parallel with the teeth and close to them.

89. **Cleft Palate.**—The operation here described by Ferguson is not intended to take the place of all the others or supersede the one published by him two years ago in The Journal of May 16, 1900, but it will be found suitable for cases where the mouth is like a Gothic arch, the palate segmented, extending downward into the cleft in a more or less oblique manner, and where the cleft extends into one nostril. Two mucoperiosteal flaps are liberated, the one from the inner segment turned downward into the mouth, and that from the outer segment passed into the nostril. When these are coaptated, raw surface to raw surface, they overlap, and are held there by a few stitches. The results have been good in the four operations in which he has tried it. The details of the operation are given as follows: "Administer chloroform by the spray method; place the patient in the Rose position; sit at the head of the patient; open the mouth with a gag; cleanse the face and mouth with a lotion of equal parts of alcohol and water, and cocainize the soft palate, pharynx, and larynx. Raise a mucoperiosteal flap from the nasal septum and inner segment of the hard palate and drag it into the mouth with Brophy's hoe-shaped periosteal elevator. The instrument just mentioned is quite sharp and easily cuts through the mucous membrane and periosteum. The formation of this flap is commenced as high in the nose as possible, and it is liberated from above downward till it is hinged by its attachment to the hard palate along the teeth. Now extend the incision in the under surface of this segment of the soft palate and uvula so as to make the completed dissection form one large flap from the hard and soft palate. The second flap is now formed from the outer segment by making an incision along the teeth down to the bone, and with a periosteal elevator detach a mucoperiosteal flap till it is hinged by the mucous membrane along the inner border of the bone segment. The soft palate and uvula segment on this side is now split along the anterior surface. The mucous membrane on the first flap faces downward while that of the [illegible] is on the nasal aspect, and when coaptated, raw

surface to raw surface, they are held there by two rows of stitches."

105. **Chronic Catarrh of the Throat and Ear.**—Harris concludes that our progress in the treatment of chronic catarrh of the ear has been little and our chief success rests in our ability to set aside the originating nasal catarrh. Tubal therapeutics at best are often of only temporary benefit, and sometimes even harmful. The promise to check the deafness is often all that we can give with safety. Prophylactic measures are of the greatest value, especially the early removal of the ever-present adenoids. In naso-pharyngeal catarrh we can speak a little more hopefully in saying that it is almost in every case capable of temporary cure by the removal of some local cause, although the local cause, however, is not always the real one. We must look for it in some general dyscrasia, the removal of which is essential to success and not always possible.

109. **Mouth Breathing.**—Ballenger says the respiratory functions of the nose are to regulate the temperature, moisten and filter the inspired air, and in mouth-breathing this function is impaired. The lower air tract is incapable of furnishing the required moisture. The bronchi and vesicles become abnormal, and producing irritation cause certain pathologic changes impairing their activity to absorb oxygen and throw off carbon dioxid. Deficient oxygenation of the blood results in the toxic products being thrown off into the circulation, and produces certain nervous phenomena and malnutrition. This leads to physical imperfection or malformation, and excessive accumulation of carbon dioxid in the blood impairs the function of the leucocytes and other cellular structures, which are unable to remove from the circulation the products of faulty metabolism, and thus the nervous phenomena are thereby increased. These conditions occur in children who are mouthbreathers whether it is due to adenoids or other forms of obstruction.

110. **Laryngeal Papillomata.**—In a case of laryngeal papillomata Roy says the patient should be kept under close observation and prolonged treatment with topical remedies, such as alcohol, formalin and chlorid of zinc, should be tried before resorting to surgical intervention. In adults, should the mild treatment prove unsuccessful and especially should there be any interference with breathing, the endolaryngeal removal with instruments may be resorted to. In children the interval of mild expectant treatment should be even longer than in adults, and should the symptoms warrant surgical intervention, then prolonged tracheotomy is the safest and surest procedure. Laryngotomy should be done only when all the other methods have failed. He reports a case apparently entirely cured by local treatment with cocain solution, though surgery seemed to be inevitable.

113. **Labyrinthine Wall.**—In the Stacke and Schwartze operation Payne now operates so as to thoroughly exenterate the antrum and attic but leaves the labyrinthine wall in the lower two-thirds of the tympanum proper untouched, to be treated later through the external meatus. In this way he finds the amount of hearing saved very much greater, and he thinks there is no reason for applying the heavier mastoid curette to the walls that are usually easily reached through the external meatus.

115. **Tuberculosis.**—Pottenger calls attention to the importance of the proper care of the upper air passages as a prophylactic to tuberculosis, thus diminishing the chances of infection. The rhinologist also has the best chance to observe the disease in its incipiency and in its curable stage.

121. **Malignant Disease of the Mouth and Neck.**—The principal immediate dangers of operation for malignant disease of the mouth and neck are shock and collapse due to hemorrhage, too much manipulation, reflex and direct inhibition of the heart and respiratory tract. These may be largely prevented by absolute control of the arterial blood supply by temporary closure of the carotid arteries, by preliminary injection of atropin, supplemented when possible by local cocain applications. The principal consecutive danger is infective inflammation, more particularly septic pneumonia. The most effectual preventive of this is a definite control of the blood supply to prevent the entrance of blood into the pulmonary tract, and shortening the operative time. In certain selected cases tracheotomy is useful. After operation the greatest reliance must be placed on warm, moist air, careful feeding, constant care of the wound and special nursing until granulations appear. The ultimate care depends on the stage at which the disease is attacked and the thoroughness of the operation. The removal of individual glands is clinically impossible, but the advantages of removing all the gland-bearing tissue in which metastases may occur *en bloc*, beginning at the most distal point, are emphasized.

128.—See abstract in The Journal, xxxviii, p. 1696.

129. **Bence-Jones Albumose.**—The test here described by Boston is a modification of the lead acetate and caustic soda test. He finds the routine described below of value in economizing time and labor, and its reactions equally decisive as those by some more complicated methods: "1. Fifteen to twenty c.c. of the filtered urine are placed in a test-tube, and to it an equal quantity of a saturated solution of sodium chloride is added, and the tube shaken to effect a perfect mixture. 2. Two or three c.c. of a 30 per cent. solution of caustic soda are now added, shaking vigorously. 3. The upper one-fourth of this column of liquid is gradually heated over the flame of a Bunsen burner to the boiling point, when a solution of lead acetate (10 per cent.) is added, drop by drop, boiling the upper previously-heated stratum of liquid after each additional drop. 4. When the drop of lead solution comes in contact with the liquid a copious pearly or creamy cloud appears at the surface, which becomes less dense as the boiling point is neared; and when ebullition is prolonged for from one-half minute to one minute the upper stratum shows a slight browning, which deepens to that of a dull black. The lower portion of the heated liquid displays less marked blacking, and below this point for some distance there is seen a variable degree of browning. Standing intensifies the reaction; but if this be prolonged for several hours the black precipitate falls through the clear stratum of liquid, collecting as a coarsely granular pigment in the bottom of the tube. This reaction has been studied in the urine of a case of myeloma: dilution, one part in ten; and often a much higher dilution gave positive results. It depends on the presence of loosely-combined sulphur—a constituent of Bence-Jones albumose—which when treated as above outlined causes the lead to be precipitated in the form of lead sulphide. Phosphates, when present in excess, may cause a slight, flocculent, brown precipitate on addition of the soda solution; but this browning is not of sufficient intensity to be mistaken for that of albumose."

131. **Gastric Mucosa.**—From a study of his amply illustrated paper Einhorn formulates the following conclusions: "1. The secretory functional disturbances of the stomach are not based on a primary change in the mucous membrane of the stomach. They rather produce, if they last for a longer time, lesions of the mucosa of greater or less extent. 2. The diagnosis of carcinoma of the stomach may, under specially favorable condition, be made from a piece of gastric mucosa if a direct invasion of the gland substance by epithelial cells can be observed. 3. Therapeutically, attention must be directed principally toward the improvement of the general body state, and only secondarily by means of special measures against any secretory anomalies that may be present."

139. **Acute Lymphatic Leukemia.**—The case reported by Reed is here discussed at length in relation to the pathology and unity of the forms. She believes that the lymphocytes originate in the bone marrow and that acute leukemia, whether lymphoid or myelocitic, is due to changes in the bone marrow, other hemopoietic organs being involved, if at all, only secondarily. She suggests that there are three forms of leukemia, all due to myelogenous changes, and that these should be known as the myelocytic, lymphoid and mixed-cell varieties, if we wish to make the blood picture the basis for clinical divisions. All three may be either acute or chronic; the myelocytic is usually chronic, the lymphoid usually acute. The nature of the disease, the etiology and primary focus in

the body, she holds, is still undiscovered. As we know it, leukemia is simply the manifestation of some poison which affects especially the bone marrow, the blood-forming organ in the adult, and ultimately causes death.

141. **Pernicious Anemia.**—The following are the conclusions of Warthin's extensive paper: "1. Pernicious anemia is essentially a hemolytic disease, the hemolysis being due to some as yet unknown poison comparable in its effect on the blood and blood organs to the action of toluylene-diamine—whether autointoxication or infection, remains yet to be determined. 2. The poison of pernicious anemia stimulates the phagocytes of the spleen, lymph and hemolymph glands, and bone marrow to increased hemolysis (cellular hemolysis). Either the phagocytes are directly stimulated to increased destruction of red cells, or the latter are so changed by the poison that they themselves stimulate the phagocytes. The hemolysis of pernicious anemia differs only in degree, not in kind, from normal hemolysis or the pathological increase occurring in sepsis, typhoid, etc. 3. It is not improbable that from the destruction of hemoglobin poisonous products (histon?) may be formed which have also a hemolytic action—a vicious circle of hemolysis may thus be produced. No proof of this exists at present. 4. The hemolysis of pernicious anemia is not confined to the portal area, as according to Hunter, but in some cases at least takes place also to a large extent in the prevertebral lymph and hemolymph nodes and bone marrow. In the majority of cases the spleen is the chief seat of the blood destruction. No evidences of hemolysis in the liver, stomach, and intestinal capillaries were found in the eight cases. The hemosiderin of the liver and kidneys is carried to these organs as some soluble derivative of hemoglobin, is removed from the circulation as hemosiderin by the endothelium, and then transferred to the liver or kidney cells. The deposit of iron in these organs is of the nature of an excretion. 5. In the majority of cases only slight reaction for iron is found at the sites of actual hemolysis (spleen, lymph and hemolymph glands and bone marrow). The greater part of the pigment in the phagocytes of the spleen, lymph and hemolymph glands does not give an iron reaction while in a diffuse form. When changed to a granular pigment the iron reaction may usually be obtained. The change to hemosiderin is for the greater part accomplished by the endothelium of the liver and kidneys. 6. The varying pathological conditions found in these different cases of pernicious anemia can be explained only by a theory of cyclical or intermittent process of hemolysis. This theory is also borne out by the exacerbations so frequently seen clinically. The autopsy findings, in so far as evidences of hemolysis are concerned, will depend on the relation between the time of death and the stage of the hemolysis. 7. The changes in the hemolymph glands found constantly in these eight cases were: dilatation of the blood sinuses and evidences of increased hemolysis, as shown by the increased number of phagocytes containing disintegrating red cells and blood pigment. In some of the cases these changes were accompanied by great increase in size and apparent increase in the number of hemolymph glands; in other cases there was no hyperplasia, the *only* evidence of the changes present being that obtained by the *microscopic* examination. The changes found can not be regarded as a specific of pernicious anemia, since it is probable that they may be produced by other infections or toxic processes characterized by great hemolysis. 8. The lymphoid and megaloblastic changes in the bone marrow do not form an essential part of the pathology of pernicious anemia, and are to be regarded as of a compensatory nature—an increased activity of red-cell formation to supply the deficiency caused by the excessive hemolysis."

148. **Calomel and Tincture of Iron.**—Sprague remarks that he has heard from practicing physicians and learned by personal experience that the use of acids during the administration of calomel was bad, as tending to mercurialization, but he has found that this idea is not only contradicted in some of the text-books, but exactly the reverse is practiced and taught in some hospitals, much to his surprise. He quotes, for instance, Hare's "Practical Therapeutics" as advising the use of tincture of chlorid of iron in connection with calomel, and says he would be pleased to hear from others on the subject.

149. **The X-Ray.**—Heeve reports cases of *x*-ray treatment of enlarged condyles and of varicose veins, and remarks that he has employed it also in various malignant conditions which he has reported elsewhere. He thinks there is no gain of safety in using the grounded screen of sheet silver. The most astonishing feature is that the *x*-ray possesses powerful analgesic properties, immediately relieving pain in cancers and ulcerations, even if extensive. The distance between the tube and the patient should never be less than five or more than twelve inches. The rule as laid down by him is as follows: Sarcoma, six inches; epithelioma, seven to nine inches; lupus, six to eight inches; ulcer, tubercular, eight inches; varicose, eight to ten inches; and skin diseases, eczema, etc., eight to twelve inches. In some patients, especially in blondes, a depressing reaction occurs, shock and a fall of temperature. This should be treated with stimulants and tonics and postponement of treatment until the general condition is attended to. In closing, he emphasizes the fact that in treating sarcoma and carcinoma we must use a high vacuum tube, running the static with the greatest number of revolutions possible.

150. **Chloretone.**—Bickle uses chloretone, 15 gr. every time two hours before operation, thus preventing post-operative vomiting, with great success. He tabulates a number of cases in his practice as showing the results of this treatment.

152. **Acetozone in Typhoid Fever.**—Abt and Lackner report briefly details of 40 cases, giving a tabulated analysis at the end of the article. The method of administration of acetozone which was found best was the aqueous solution with a few drops of orange extract added. Only two cases were fatal, one from pneumonia and pulmonary edema and the other as the result of pyrexia. Stupor and tympanites were almost entirely absent; hemorrhage occurred twice in the same case. The characteristic typhoid fetor of the stools was markedly diminished. The average duration of the fever after acetozone was taken was thirteen and one-half days in 37 cases, including two relapses. The total average was 23.6 days.

162. **Surgery of the Kidneys.**—From the complete data of his article, concluded in this issue, Lower deduces the following conclusions: 1. Before doing a cutting operation on the kidney, especially a nephrectomy, the presence of a second functionating kidney should be established. 2. The best and safest method for ascertaining the presence of a functionating kidney is by the aid of cryoscopy and ureteral catheterization. 3. The function of the kidney is best determined, in the order of their importance: (*a*) by the freezing-point of the urine; (*b*) by phloridzin glycosuria; (*c*) by the quantity of urine excreted; (*d*) by the freezing of the blood. 4. The most reliable method of obtaining the separate urines is by the ureteral catheter.

170. **Tuberculosis.**—Eichberg considers the contagiousness of tuberculosis, like the reported death of Mark Twain, "greatly exaggerated," and that in our attempts to educate the public we have rather overdone the thing with results that are not exactly to our liking. While the conception has accomplished much good in giving the patients their own bedrooms and throwing open the doors and windows, and put a stop to some extent to indiscriminate expectoration, it has gone beyond this and laid the foundation for the blind unreasoning terror which now represents the *mental* attitude of many toward these sufferers, and has held them up as a veritable hotbed for the dissemination of the malady. It has caused communities to pass laws against the erection of sanitariums. He asks if we have not gone beyond the limit of scientific teaching as much as we have gone beyond the limits of enlightened humanity.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

British Medical Journal (London), October 11.

1 *Recent Studies of Immunity. William H. Welch.
2 *Concerning Spastic and Syphilitic Spinal Paralysis. Wilh. Erb.

67. **Anteversion of Movable Kidney.**—Wuhrmann believes that the disturbances caused by a movable kidney are due to the anteversion of the organ. No one has previously called attention to this anteversion, as it corrects itself when the subject reclines. But when he sits or stands or lies on his stomach the kidney bends forward and causes trouble. As most persons die in bed, this anteversion is not noticed at autopsies, but he recently found it in dissecting the cadaver of a suicide who had drowned himself by crawling into comparatively shallow water. Wuhrmann has established that when the upper pole of the kidney is not firmly adherent to its support, it projects into the abdominal cavity and the liver and spleen never rest until they have bent it over at a right angle or succeeded in detaching it completely from its support.

70. **Tuberculosis by Inoculation.**—Lassar examined 365 butchers and other men employed about the slaughter houses at Berlin and found that 7 had unmistakable and 3 suspicious tubercular nodules on the hands. This is nearly 3 per cent., which is far above the average occurrence of this affection on the hand. He cites 16 other cases of a tubercular infection of the hand in persons who had occasion to handle the carcasses of tuberculous animals. The list includes Ravenel's case, published last May, and the case of Dr. Wally.

71. **Transmissibility of Human Tuberculosis.**—Moeller found it impossible to induce tuberculosis in the calves and goats in his experiments, even after passage of the bacilli through the goats.

72. **Chronic Diphtheroid Throat Affections.**—Neisser reported in 1900 some cases of a chronic diphtheroid affection of the throat without specific diphtheria. Loeffler's bacilli were found in the throat year in and year out, sometimes virulent and sometimes not, and the most energetic treatment failed to dislodge them. The serum of the persons thus affected possessed extraordinarily high antitoxic power, and they were thus protected against the ravages of the parasites. He now describes another similar case in detail. The patient was a wet nurse, and the children in the family and other servants in contact with her became affected with diphtheria, but she was exempt. Her blood serum contained approximately 1875 antitoxin units, and she was thus protected. She evidently conferred this protection on the babe at her breast, but after the nursing was discontinued this child also contracted diphtheria, after an interval of four months. The length of this interval shows the tenacity of even the passive immunity acquired through the breast milk. The nurse had never had true diphtheria, but she had occasionally times of hoarseness, dryness, and the sensation of a foreign body in the throat. There had been a case of diphtheria in her family when she was 8, and her voice was always husky. She had had an exacerbation of hoarseness and coughing about the time she ceased to nurse the babe, but continued to have charge of him.

73. **Proliferation of Tissue in Etiology of Carcinoma.**—Marchand's article is an exhaustive review of what is known and surmised in respect to malignant proliferation of tissue. He believes that if we exclude a microparasitic cause for the phenomena observed in malignant epithelial neogrowths, they can be explained only by the assumption of some toxic substance or substances elaborated by the cells in their vital processes. The formation and accumulation of this substance are due to some morbid deviation from their normal metabolism, entailing abnormal structure from the lack of normal regulation of the cellular activity. This deviation or degeneration may differ in degree and in kind. There may be enhanced capacity of proliferation independently of any degenerative process. This is especially liable to occur in embryonal tissue, but it presupposes the formation of some toxic substances. The resistance opposed by the normal organism to proliferation of tissue is possibly in normal conditions the neutralization of the specific injurious properties of the tissues by the healthy juices of normal cell metabolism. [Marchand, we learn, was offered, and declined, the chair left vacant by Virchow's death.—Ed.]

74. **Influence of New Tuberculin on Cell Metabolism.**—Mitulescu's research shows that tuberculin administered in small doses and with due caution in suitable cases does not induce processes of disassimilation in the cells, but stimulates them to increased nutritive processes, and to the gradual elaboration of specific immune bodies which diminish the vitality of the tubercle bacilli and neutralize their toxins and proteins. It also causes a local inflammation around the tubercular processes, favoring their encapsulation by sclerotic tissue.

87. **Infection of Cattle Fed on Tuberculous Sputa.**—In Schottelius' tests sputa from consumptives were scattered on the fresh hay or dropped in the milk for the calves, without manipulation, in the attempt to approximate natural conditions so far as possible. About 50 gm. at a time was given each animal and repeated twenty-four times. None of the 3 animals exhibited apparent tuberculosis, but the characteristic lesions of tuberculosis were found in each, and bacilli were discovered in the parts affected.

88. **Tests of Inhalation of Spray.**—Emmerich's experience demonstrates that it is possible for an inhaled spray to penetrate in large amounts to the remotest portions of the lungs, but only under certain conditions. The amount of fluid that is sprayed must be calculated mathematically for the size of the room, and every part of the entire room must be filled thick with the droplets. The deficit of moisture in the air of the room must also be computed and the amount of fluid to be sprayed determined accordingly. A 2 per cent. solution of boric acid was sprayed in the Bulling inhaling cabinet, and a dog kept in the cabinet for an hour. A large proportion of the boric acid was found in the remotest alveoles of his lungs, and the nose of the dog is less permeable than the human nose. The results were the same when a salt solution was sprayed. The air must be saturated to a certain point. If the floor and furniture remain dry the mucosa of the respiratory passages does not become moistened by the spray. The tests showed that the air in the Bulling inhaling chamber contained .0002 mg. of ozone to the liter. Exposure to sunlight largely increased the proportion of ozone, and he suggests that this point had better be borne in mind in the construction of inhaling chambers.

89. **Anesthesin.**—Spiess remarks that cocain still remains the best local anesthetic for minor operations, but the after-treatment belongs to orthoform and anesthesin. Their domain also includes all painful cutaneous and other affections involving the nerve terminals. He believes that the healing process is promoted and really begins only when the reflex irritation of the vasomotor nerves by the injured nerve terminals is abolished with an anesthetic. He has long proclaimed the direct connection between anesthesia and the healing process. It puts an end to the reflex vasomotor irritation, the consequent hyperemia and the swelling, as the inflamed nerve terminals are soothed by the anesthetic, and the reflex communication interrupted. He has found insufflation of orthoform and, still better, of anesthesin, remarkably effective in controlling and curing whooping cough, coryza, laryngeal affections, etc.

100. **Gastrointestinal Disturbances in Case of Arteriosclerosis.**—Schrötter describes and reviews a number of cases of recurring meteorism, colics and other gastrointestinal disturbances which were traced to deficient blood supply in the regions involved when extra demands were made on their functions. Ischemia of the heart muscle is the cause of angina pectoris; ischemia of the gastrocnemius, of intermittent limping. The arteriosclerotic ischemia of the digestive tract manifests itself in the form of enteralgias or as intermittent paresis of the intestines. When exaggerated function is required of the intestine, the result of a laxative or of a course of mineral waters, or by demands on the digestive functions, the patient is exposed to the danger of exaggeration of the colics and of the meteorism until the picture of actual stenosis of the intestine is presented. As the heart energy becomes depressed and the blood pressure in the intestinal vessels falls, thrombosis is liable to develop. This abdominal form of angina pectoris is illustrated in a case he had occasion recently to observe. The attacks occurred after exercise, and

were distinguished by the prevalence of abdominal symptoms and the lack of irradiation into the left shoulder and arm. The complexion was icteric and the pains sometimes involved the teeth and temples. The patient was much improved by .01 gm. erythroltetranitrate, which seemed to shorten the attacks. At the same time he took 2 gm. a day of rubidium iodid. The pains and icterus, complicated by vomiting, in a case at Bamberger's clinic, suggested the diagnosis of cholelithiasis, but the autopsy disclosed insufficiency of the aorta and stenosis of the coronaries, with no evidences of gallstones. If sclerosis of the heart vessels alone can induce such a clinical picture it is not surprising that a similar condition in the abdominal aorta is liable to produce marked gastrointestinal disturbances. In Schnitzler's patient the attacks of pain were accompanied by constipation, and no dietetic or therapeutic measures afforded relief. A laparotomy revealed only loose adhesions between gall-bladder and adjacent intestines. The pains continued and the patient finally died in an attack after evacuation of a black stool. The autopsy showed an old occlusion of the mesenteric arteries and a recent perforation into the intestine. The pains were evidently due to the insufficient blood supply to the parts. Ortner has also observed a case in which the symptoms were extreme meteorism of the stomach and intestines, without peristalsis, occurring two or three hours after meals. There was also pain in the umbilical region. Slight atheroma of the ascending aorta could be palpated, and the autopsy disclosed extensive atheroma in the abdominal aorta, in the stomach arteries and also in the superior mesenteric. In this case the intermittent meteorism was evidently the result of the arteriosclerosis of the intestinal vessels.

102. **Histology of the Pancreas in Diabetes Mellitus.**—Weichselbaum states that the autopsies of 33 cases of pancreas diabetes confirm the assumption that Langerhans' islands play a predominant rôle in the transformation of the carbohydrates in the organism, and that lesions in these islands may entail pancreas diabetes. The other alterations found in the pancreas seem to be the consequences of the diabetes rather than factors in its production.

104. **Morphin Dipsomania.**—Krafft-Ebing uses this term to express the temporary resort to morphin to relieve an attack of melancholia. The subject in the case he describes was not addicted to morphin and had a horror of it, but sought oblivion in it, the equivalent of alcoholic dipsomania. The case demonstrates anew that dipsomania belongs to the epileptic neuroses. The epileptic character was established in this case by the traumatic origin, the vertigo, the great irritability during the attacks, the ideas of persecution, the twilight state, deambulatio and amnesia. It is possible that the melancholia, with its reactive impulse to drink, may be a psychic equivalent for an epileptic insult. It is remarkable, he adds, that there are so many clinical points in common between dipsomania and epilepsy. The abuse of alcohol may have an epileptogenic tendency, and renewed abuse of it may arouse this latent tendency and induce epileptic phenomena.

109. **Successful Serum Treatment of Scarlet Fever.**—This report of Moser's experiences was the newspaper sensation of the day at the recent "Naturforscher" Congress at Carlsbad. He announced that at the St. Anna Hospital for Children at Vienna usually only the very severest cases of scarlet fever are received. In 81 out of 699 cases a serum was tried derived from horses immunized with streptococci taken from the blood found in the heart of children dying from scarlet fever. The horses were injected with progressively increasing doses of living cultures of these streptococci, not passed through animals but cultivated only from bouillon to bouillon. After months of this preparation at the official Institute for Serotherapy at Vienna, in charge of Professor Paltauf, the serum from the horses was used for the treatment of the severest cases of scarlet fever at the St. Anna Hospital, in charge of Professor Escherich. The mortality at the hospital was reduced to 8.99 per cent., while the average mortality at the six other scarlet fever wards throughout Vienna was 13.09, and none of the other stations had half as many patients. Previous experiments with normal horse serum and with Mar- morek's antistreptococcus serum had been completely negative. After the injection of 180 c.c. of the prepared serum the rapid and favorable change in the general condition is striking. The exanthem does not come to full development or disappears with exceptional rapidity. The disturbances in the central nervous system also vanish in a short time. The temperature and pulse usually decline during the early stages of the exanthem, contrary to the scarlet fever curve, and the respiratory disturbances parallel them. The gastrointestinal symptoms usually vanish in the course of twenty-four hours. Tendency to weak heart action is counteracted by the serum. The little patients are also relieved from the swelling in the naso-pharyngeal cavity and the accompanying coryza, and they no longer present the aspect of very sick children. The extensive destructive processes in the throat formerly observed did not occur in the serum-treated cases, but superficial necrosis was not prevented. The impression prevailed that nephritis was less frequent than formerly, but it is difficult to decide this question definitely yet. No instance of chronic septic intoxication was noted, but pyemic conditions were observed occasionally. An important advantage of the serum treatment is the abbreviated course of the disease. The dose injected ranged from 30 to 180 c.c., but the smaller amounts proved ineffective and the larger dose is now currently used. About 30 children were injected with 10 c.c. as a prophylactic measure, but the number is too small for final conclusions as to its efficacy. The by-effects of the serum were like those noted in the early days of antidiphtheria serum treatment: slight exanthem and occasional pains in the joints in a few cases, with, exceptionally, an abscess at the point of injection. With these exceptions the serum, even in the large doses injected, proved perfectly harmless and the experience to date fully excludes any injury to the patient from this method of treatment. Moser adds that he has found streptococci in the blood in the heart in 63 out of 99 cases of children dying from scarlet fever. These streptococci evidently differ from those found in erysipelas, etc. They are seldom pathogenic for animals, and then only in large amounts. They agglutinate also differently, as he established with his prepared serum. The mortality was nil when the serum was injected the first or second day; it was 14.29 per cent. when first injected the third day; 23.08 per cent. the fourth, to 50 per cent. the ninth day. [The antitoxic action of the serum is further confirmed by the fact that mice receiving 10 to 50 cg. of an aqueous extract of the dejecta of scarlet fever subjects to which 1 c.c. of the prepared serum had been added did not exhibit any symptoms of intoxication. Other animals injected with 2 cg. without the serum, presented morbid symptoms and died in five to eighteen hours afterward, when the dose was increased to 30 and 50 cg., while the mice that had received the serum were sound and healthy. The toxicity of the dejecta of scarlet fever subjects was demonstrated several years ago by Freund. Schnirer also mentions in a letter from Vienna to the *Sem. Méd.*, that the preventive injections proved apparently effective.—Ed.]

The Public Service.

Army Changes.

Changes in station and duties of officers of the Medical Department, U. S. A., from October 11 to 17, inclusive:

Banta, Wm. P., contract surgeon, U. S. A., is relieved from duty at the General Hospital, San Francisco, and will report in person to Major Ogden Rafferty, surgeon, U. S. A., medical superintendent of the Army transport service at San Francisco, for duty as his assistant.

Under instructions from the President, the following-named officers, now at San Francisco, are honorably discharged by the Sec- retary of War from the service of the United States, to take effect Nov. 20, 1902, their services being no longer required: Major Ira C. Brown, surgeon, U. S. Vols.; Captain Luther S. Harvey, asst.- surgeon, U. S. Vols.

Under instructions from the President, Major William Bowen, surgeon, U. S. Vols., is honorably discharged by the Secretary of War from the service of the United States, to take effect Nov. 20, 1902, his services being no longer required. He will proceed to his home.

Chapman, W. Earle, contract surgeon, U. S. A., now at Governor's Island, N. Y., is relieved from furthe [illegible] of the Philippines and will proceed to his [illegible] and, on arrival, report by letter to the [illegible] Army for annulment of contract.

Contract Surgeon Robt. P. Cooke is relieved from duty at Ft. H. G. Wright, N. Y., and will proceed to Chickamauga Park, Ga., and report in person on Nov. 2, 1902, to the commanding officer of Camp Geo. H Thomas, for duty.

Contract Surgeon Raoul A. Amador, now on leave of absence in New York, is relieved from duty at Camp George H. Thomas, Ga., and will proceed to Ft. Revere, Mass., and report in person to the commanding officer of that post for duty.

De Loffre, Sam'l M., contract surgeon, U. S. A., now at San Francisco, will repair to this city and report in person to the Surgeon-General of the Army for annulment of contract.

Grissinger, Joy W., first lieutenant and asst.-surgeon, U. S. A., is relieved from duty at Ft. Totten, N. Y., and will repair to Washington, D. C., and report in person at the Army Medical Museum Building, to Colonel Calvin DeWitt, assistant surgeon-general, president of the faculty of the Army Medical School, for the course of instruction prescribed in Par. 542 and 543, Army Regulations.

Major James M. Kennedy, surgeon, U. S. Vols. (captain and asst.-surgeon, U. S. A.), is honorably discharged by the Secretary of War from the service of the United States as major and surgeon, U. S. Vols. only, to take effect Oct. 31, 1902.

Kennedy, James M., major and surgeon, U. S. Vols., now at San Francisco, will report in person to the commanding general, Department of California, for assignment to temporary duty at the U. S. General Hospital at San Francisco.

By direction of the Secretary of War, leave of absence for 20 days, to take effect on or about Oct. 15, 1902, is granted Lieut.-Col. Louis M. Maus, deputy surgeon-general, U. S. A.

Major John A. Metzger, surgeon, U. S. Vols., is honorably discharged by the Secretary of War from the service of the United States, to take effect Nov. 15, 1902, his services being no longer required. He will proceed to his home.

By direction of the Secretary of War, leave of absence for one month and fourteen days, to take effect on or about Oct. 23, 1902, is granted Contract Surgeon Joseph Pinguard, U. S. A.

Reynolds, Charles R., first lieutenant and asst.-surgeon, U. S. A., is relieved from duty in the Division of the Philippines and will proceed to San Francisco, and report by telegraph to the Adjutant-General of the Army for orders.

Woodbury, Frank T., lieutenant and asst.-surgeon, U. S. A., now at San Francisco, will proceed to Plattsburgh Barracks, N. Y., and report in person to the commanding officer of that post for duty.

Stevenson, William, major and surgeon, U. S. A., is granted leave of absence for four months.

The following-named officers are honorably discharged by the Secretary of War from the service of the United States, to take effect Nov. 20, 1902, their services being no longer required: Captain Dwight B. Taylor, asst.-surgeon, U. S. Vols.; Captain Paul Dessez, asst.-surgeon, U. S. Vols.

The following-named officers, now at San Francisco, are honorably discharged from the service of the United States, to take effect Nov. 20, 1902, their services being no longer required: Major Samuel O. Potter, surgeon, U. S. Vols.; Major James C. Minor, surgeon, U. S. Vols.; Major Simon Fraser, surgeon, U. S. Vols.; Captain Laurel B. Sandall, asst.-surgeon, U. S. Vols.; Captain Geo. A. Zeller, asst.-surgeon, U. S. Vols.; Captain Geo. E. Means, asst.-surgeon, U. S. A.; Captain Thomas W. Jackson, asst.-surgeon, U. S. Vols.; Captain Harry R. Lemen, asst.-surgeon, U. S. Vols.

Navy Changes.

Changes in the Medical Corps of the Navy, week of October 18:

P. A. Surgeon T. D. Myers, retired, ordered to the Naval Hospital, Philadelphia.

Dr. J. L. Neilson, appointed asst.-surgeon with the rank of lieutenant.

Asst.-Surgeon H. A. Dunn, detached from Naval Hospital Yokohama, Japan, and ordered to Naval Station, Cavite, P. I.

Pharmacist C. McLarty, appointed pharmacist, from April 25, 1902.

P. A. Surgeon W. H. Bucher, detached from *Panther* and granted leave for one month.

Pharmacist F. T. Gordon, detached from the Navy Yard, League Island, Pa., and ordered to the *Wabash*.

Dr. R. H. Michels, appointed assistant surgeon from Oct. 11, 1902.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended *Oct. 16, 1902:*

Surgeon John Godfrey, to proceed to Cape Fear quarantine, Southport, N. C., as inspector of unserviceable property.

P. A. Surgeon J. M. Eager, detailed to represent the service at the International Conference on Tuberculosis at Berlin, Germany, October 22-26.

P. A. Surgeon C. H. Gardner, to proceed to Port Townsend quarantine, Washington, as inspector of unserviceable property.

P. A. Surgeon L. E. Cofer, to proceed to New York City and report to Surgeon G. W. Stoner, Immigration Depot, for temporary duty. Leave of absence amended so that it shall cover the period from September 10 to November 18.

Asst.-Surgeon von Ezdorf, granted leave of absence for two months and twenty-four days from November 5.

Asst.-Surgeon C. E. D. Lord, granted leave of absence for one month from November 6.

Asst.-Surgeon J. T. Burkhalter, granted leave of absence for one month from November 3.

Asst.-Surgeon J. S. Boggess, granted leave of absence for fifteen days from November 1.

Asst.-Surgeon R. E. Ebersole, to proceed to Brunswick, Ga., quarantine station and assume temporary charge of the station during the absence on leave of Asst.-Surgeon J. T. Burkhalter.

A. A. Surgeon J. T. Bullard, granted leave of absence for thirty days from September 15.

A. A. Surgeon W. R. Hunter, granted leave of absence teen days from October 13.

A. A. Surgeon J. G. Stanton, granted leave of absence f five days from October 7.

A. A. Surgeon W. S. Walkley, granted leave of absence days from October 14.

Senior Pharmacist and Special Distributing Agent W. dowell, relieved from duty at Havana, Cuba, and directe ceed to New York, and report arrival.

Senior Pharmacist L. W. Ryder, granted leave of ab fifteen days from October 13.

BOARDS CONVENED.

Board convened at Port Townsend, Wash., October 20, physical examination of officers of the Revenue Cutter Serv *tail for the Board:* P. A. Surgeon C. H. Gardner, airm Surgeon M. H. Foster, recorder.

Board convened at San Francisco, October 20, for the examination of officers of the Revenue Cutter Service. I the Board: P. A. Surgeon W. G. Stimpson, chairman; geon W. C. Rucker, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and have been reported to the Surgeon-General, Public Healt Marine-Hospital Service, during the week ended Oct. 18, 190

SMALLPOX—UNITED STATES.

California: San Francisco, Sept. 28-Oct. 5, 11 cases.

Colorado: Denver, Sept. 27-Oct. 4, 1 case.

Illinois: Oct. 4-11, Chicago, 13 cases; Freeport, 7 cases.

Indiana: South Bend, Oct. 4-11, 2 cases, 2 deaths.

Michigan: Detroit, Oct. 4-11, 7 cases, 1 death.

New Hampshire: Nashua, Oct. 4-11, 23 cases.

New Jersey, Elizabeth, Aug. 31-Oct. 11, 9 cases, 4 deaths.

New York: Oct. 4-11, Binghamton, 1 case; New York, 1 death.

Ohio: Cincinnati, Oct. 3-10, 3 cases; Cleveland, Oct. 3-1 cases, 12 deaths; Hamilton, Oct. 4-11, 1 case; Toledo, Sept. 2 4, 1 case; Youngstown, Sept. 27-Oct. 4, 2 cases, 2 deaths.

Pennsylvania: Oct. 4-11, 4 cases; Johnstown, 5 cases, 2 d McKeesport, 2 cases; Philadelphia, 1 case.

South Carolina: Charleston, Oct. 4-11, 5 cases.

Utah: Salt Lake City, Oct. 4-11, 3 cases.

Wisconsin: Green Bay, Oct. 5-12, 1 case; Milwaukee, Oct. 12 cases.

SMALLPOX—FOREIGN.

Barbados: July 13-Sept. 29, 793 cases, 30 deaths.

Belgium: Sept. 20-27, Brussels, 5 deaths; Ghent, 1 death.

Canada: Amherstburg, Oct. 4-11, 2 cases.

Ecuador: Guayaquil, Sept. 13-27, 4 deaths.

France: Paris, Sept. 20-27, 1 death.

Great Britain: Dundee, Sept. 20-27, 1 case; Liverpool, Sept. Oct. 4, 9 cases, 1 death; London, Sept. 20-27, 4 cases; Sunderl Sept. 20-27, 1 death.

India: Bombay, Sept. 9-16, 5 deaths; Calcutta, Sept. 6-1 death.

Mexico: City of Mexico, Sept. 20-28, 1 case.

Russia: Moscow, Sept. 13-20, 2 cases; Odessa, Sept. 20-27 cases; St. Petersburg, Sept. 13-27, 13 cases, 3 deaths.

Spain: Corunna, Sept. 20-27, 1 case.

Straits Settlements: Singapore, Aug. 23-30, 1 death.

Switzerland: Geneva, Sept. 13-20, 1 case.

YELLOW FEVER.

Colombia: Panama, Sept. 29-Oct. 6, 15 cases.

Ecuador: Guayaquil, Oct. 20-27, 1 death.

Mexico: *Coatzacoalcos,* Sept. 27-Oct. 4, 1 case, 2 deaths; Me Sept. 19-Oct. 3, 11 cases, 6 deaths; Vera Cruz, Oct. 4-11, 5 cases, deaths.

CHOLERA.

China: Aug. 16-30, Hongkong, 25 cases, 21 deaths; New Ch 90 cases, 85 deaths.

Egypt: Alexandria, Sept. 20-27, 208 cases, 177 deaths; Su Sept. 10-16, 20 cases, 16 deaths.

India: Calcutta, Sept. 6-13, 10 deaths.

Japan: Osaka and Hiogo, Sept. 6-20, 26 cases, 62 deaths.

Java: Batavia, Aug. 31-Sept. 6, 48 cases, 40 deaths.

Korea: Aug. 17, Chenampo, 92 cases, 50 deaths; Syen Chun, 2 cases, 11 deaths.

Straits Settlements: Singapore, Aug. 23-30, 1 death.

PLAGUE—UNITED STATES.

California: San Francisco, Oct. 7, 1 death, bacteriologically confirmed.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 16-30, 19 cases, 19 deaths.

Egypt: Alexandria, Sept. 20-27, 4 cases, 2 deaths.

India: Bombay, Sept. 9-16, 51 deaths; Calcutta, Sept. 6-13, 6 deaths; Karachi, Sept. 7-14, 8 cases, 6 deaths; Madras, Sept. 6-12, 1 death.

Russia: Odessa, June-Sept. 29, 38 cases, 11 deaths.

New Patents.

Patents of interest to physicians, etc., Oct. 7 and 14:

710429. Electric body appliance. Patrick J. Collins and C. G. Boland, Scranton, Pa.

710689. Massaging machine. White W. M. Hickey, San Francisco.

710864. Water bag. Daniel Hogan, New York City, and C. W. Meinecke, Jersey City.

710784. Sterilizing machine. Charles A. King, Mattapoisette, Mass.

710708. Bottle for medicine, etc. *Charles W. McShane,* Zanesville, Ohio.

711403. Antiseptic soap cake. Eugene Klein and O. P. Workman, Grand Rapids, Mich.

710996. Artificial leg. John A. Peer, Philadelphia.